PROCEEDINGS

OF THE

MADRAS GOVERNMENT

IN THE

PUBLIC WORKS DEPARTMENT.

IRRIGATION BRANCH,

FOR THE

MONTH OF AUGUST 1892.

Printed by Authority.

MADRAS:
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PUBLIC WORKS DEPARTMENT.

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PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT,

FOR THE MONTH OF AUGUST 1892.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following papers :—

Petition from Messrs. J. ADINARAYANA BROTHERS, to the Executive Engineer, Western Division, dated 30th November 1891.

We, the undersigned merchants of Guntúr, beg to bring the following few lines into your kind consideration and solicit the favour of early orders after obtaining the sanction of the Government or higher authorities in case your honour thinks necessary.

We have intended to start a rice mill, at first a small one, which can turn out about 5 candies of paddy every day and which requires about 8 horse power in your delta.

2. With a view to this we have seen several localities and the idea of utilizing the water power by means of turbines suggested itself to be more economical and at the same time giving some revenue to the Government. Besides, the adoption of this course is beneficial to the neighbouring public, since it does away with the setting up of a steam engine which consumes large quantities of fuel and consequently enhances the price of the same.

3. Further we beg to state that this business of utilizing the water power can be done without the least interference with the works of the Public Works Department and without in the least diminishing the quantity of water in the canal. All that is required being to take a channel from any convenient spot above the lock and leading it to the mill in the neighbourhood and discharge the water down the lock.

4. If a masonry sluice of 2′ × 2′ for the purpose be given, we shall be glad to commence the work near Duggirala lock, where we can have a fall of about 7 feet and pay Government a reasonable amount of Rs. 400 every year which is the water-tax on 100 acres.

5. The giving of water for this purpose for the above sum may appear very favorable to us when compared with the value of fuel which a steam engine consumes, but, owing to the stoppage of the mill during three months of the busiest part of the year when the canals are closed, we cannot offer a higher amount.

6. In case your honour gives sanction for the sluice, we shall be glad to build it at the best locality pointed out by your honour, regard being had to the safety of the canal, &c.

7. For these reasons, we humbly beg your honour to be so good as to consider the advantages of the idea both to the Government and the public and favour us with the sanction of the same after obtaining the approval of higher authorities in case your honour deems necessary.

8. For which act of kindness we, as in duty bound, shall ever pray.

From J. HANNAN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 19th December 1891, No. 2334 K.S.

I have the honour to forward, for your remarks, an application (to be returned) for water to work a turbine. I see no objection to granting the application subject to the condition that we cannot undertake to maintain water above a certain level, but that we can do so to a minimum level, as I certainly think we can for at all events eight months in the year at certain locks. We could also guarantee a certain minimum discharge. Without such guarantees water power will not, I imagine, be utilized. The applicant in this case does not state that he wants such guarantees, but they are implied in his offer to pay for the water. I consider his offer as regards payment sufficiently reasonable to start with, but Government should reserve to itself the right after a definite period, say three years, to raise the price to a rate not exceeding, say Rs. 5, for every ·015 c. ft. supplied, which is the irrigation charge and would represent roughly half the cost of using steam power.

Memo. to the Superintending Engineer, II Circle, dated 5th Feb. 1892, No. 23 K.S.
Tel. from „ „ II „ „ 4th June „ „ 9.
„ „ „ II „ „ 28th „ „ „ 15.

No. 128 I.

Note by the Chief Engineer for Irrigation.

Various unsuccessful attempts have from time to time been made to get the water power available at the locks of the Godávari and Kistna canals utilized.

2. The conditions are somewhat different from those obtaining on the Ganges canal and other canals of the North-western Provinces and the Punjab; there the work which is required to be performed is chiefly grinding wheat, for which the machinery used is very simple, here the work most required to be performed is husking rice.

3. It is recommended that the offer now made be accepted with the following stipulations, viz.—

1*st.*—All water drawn from the canal for working the machinery must be returned to it again in the same condition; no portion of it must be applied to any other purpose.

2*nd.*—If water is required for any manufacturing operation, the payment for it will be in addition to the amount charged for motive power and will be the subject of a separate agreement.

3*rd.*—The Government will not be liable for compensation in respect of loss from stoppage of water in the canal, arising from any cause beyond the control of Government or which may be necessary for any repairs, alterations or additions to the canals.

4*th.*—The size of the sluice through which the water is drawn from the canal shall not exceed 2′ × 2′ and its sill shall not be below the level of the upper sill of the adjacent lock.

5*th.*—The sluices, channels, &c., constructed on canal lands shall be of designs approved by the Superintending Engineer of the circle and the lands on which such works stand shall remain the property of Government.

6*th.*—The amount to be paid shall be Rs. 400 a year for five years, after which the terms of the agreement shall be open to revision.

7*th.*—The first annual payment to be made within a week of first admission of water through the head sluice of the works and subsequent annual payments to be made on or before the anniversaries of the first payment; in the case of failure to make any payment, the canal officers to cut off the supply of water to the works till the payment due for the year current is made.

Ootacamund,
23rd July 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 1st August 1892, No. 659 I., Public Works.

The recommendations of the Chief Engineer for Irrigation are approved.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, the Superintending Engineers, I and II Circles.
,, other Superintending Engineers.
,, the Revenue Department.
Editors' Table.

Exd. A. D. Xavier.
Spare Copies

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 1st.

Recd. *Encl.*

G.O., 1st Aug. 1892, No. 659 I.

AUGUST.

Water Power

Certain stipulations recommended by th e Chief Engineer for Irrigation in connectio n with the leasing out of — at Commamu r and Duggirala locks, Kistna, approved.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From J. HANNAN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, Tank Restoration Scheme, dated Bezváda, 11th July 1892, No. 941 K.S.

I have the honour to forward herewith, for sanction of Government, an estimate of Rs. 2,275 for survey establishment required for No. VII Party, Tank Restoration Scheme, during 1892–93.

2. The works establishment sanctioned in G.O., No. 120 I., of 8th February 1892, for this party during 1892–93 amounted to Rs. 4,464 against Rs. 7,104 in last year; but as one sub-party has since been transferred to the investigation of tanks in upland taluks, the amount of the estimate now submitted has been reduced to Rs. 2,275.

3. The sum of Rs. 4,400 provided in the budget for this purpose has since been reduced in G.O., No. 517 I., of 4th June 1892, on account of the transfer of this sub-party to Rs. 2,240.

Order—dated 2nd August 1892, No. 660 I., Public Works.

The following estimate is sanctioned in lieu of the estimate of Rs. 4,464 sanctioned in G.O., No. 120 I., dated 8th February 1892 :—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.
Tank Restoration Works.
Original Works.
Survey establishment required for No. VII Party, Tank Restoration Scheme.

	RS.
Estimate	2,275

2. This sanction is registered as No. 78 I. of 1892–93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with one estimate.
" Examiner, Public Works Accounts.
" Chief Engineer for Irrigation.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 2nd.

Recd. *Encl.*

G.O., 2nd Aug. 1892, No. 660 I.

AUGUST.

Survey Establishment

Estimate of Rs. 2,275 for — required for No. VII Party, Tank Restoration Scheme, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From Lieut.-Colonel D. McN. CAMPBELL, R.E., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepâk, 10th June 1892, No. 179 E.I.

I have the honour to submit, for early sanction of Government, a revised estimate with comparative statement for improvements to the Vanamadevi anicut channel in the South Arcot division.

2. The original estimate of Rs. 11,100 was sanctioned in G.O., No. 290 I., dated 21st May 1890, and the work is now virtually completed.

3. The cause of excess in several items of the work is due to a very great extent either to the provision made for them in the original estimate being excessively low, or else none being made, and is fully explained in the remark column of the comparative statement.

4. The Executive Engineer reports that as the revised estimate deals with *actual cost* it could not be submitted earlier.

Memo. from the Chief Engineer for Irrigation, dated 16th June 1892, No. V/34 S.A.
Endorsement by the Superintending Engr., V Circle, dated 18th July 1892, No. 215 E.I.

No. 127 I.

Note by the Chief Engineer for Irrigation.

Under the explanations given, the revised estimate of Rs. 13,900 is recommended for sanction in lieu of the one for Rs. 11,100 sanctioned in G.O., No. 290 I., dated 21st May 1890, for improving the Vanamadevi channel.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

OOTACAMUND,
22nd July 1892.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 2nd August 1892, No. 661 I., Public Works.

The following revised estimate, amounting to Rs. 13,900, for improving the Vanamadevi channel from the Vanamadevi anicut in the South Arcot district, is sanctioned in supersession of the estimate for Rs. 11,100 sanctioned in G.O., No. 290 I., dated 21st May 1890:—

Irrigation.
43. Minor Works and Navigation.
Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.
Works for which a continuous Record of Expenditure is kept.
South Arcot Division.
Original Works.

	RS.
Improving the Vanamadevi channel, estimate	13,900

2. This sanction is registered as No. 79 I. of 1892-93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, V Circle, with two enclosures.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 2nd.

Recd. *Encl.*

G.O., 2nd Aug. 1892, No. 661 I.

AUGUST.

Vanamadevi Channel

Revised estimate of Rs. 13,900 for improving the — from the Vanamadevi anicut in the South Arcot district, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From J. HANNAN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation (Tank Restoration Scheme), dated Bezváda, 11th July 1892, No. 940 K.S.

I have the honour to forward, herewith, for sanction of Government, an estimate amounting to Rs. 5,150 to meet the cost of the Survey establishment required for the investigation of the irrigation projects in the upland taluks of the Kistna district during 1892–93.

2. The excess of Rs. 2,150 over the estimate of last year is due to the transfer of one sub-party from No. VII Party, Tank Restoration Scheme, sanctioned in your Memorandum No. 385 T., dated 5th March 1892, and to the extra provision made in the estimate for travelling allowances, &c., of surveyors when first joining their posts as detailed below:—

	RS.
Two surveyors on Rs. 60	1,440
Eleven lascars on Rs. 6	792
Travelling allowances, &c.	62
	2,294
Deduct for two lascars provided in last year's estimate not required this year	144
Total ...	2,150

3. Sanction is also requested to the continued employment of the draughtsman on Rs. 50 for the whole year, and of the clerk on Rs. 20 for two months only.

Order—dated 2nd August 1892, No. 662 I., Public Works.

The following estimate is sanctioned:—

Provincial.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.
Kistna Western Division.
Original Works.
Survey establishment required for investigating upland irrigation projects.

	RS.
Two surveyors for 12 months at Rs. 80 each per mensem	1,920
Do. do. at Rs. 60 do.	1,440
Twenty-four lascars for 12 months at Rs. 6 do.	1,728
Travelling allowances when first joining	62
Total ...	5,150

2. This sanction is registered as No. 80 I. of 1892–93.

3. The Superintending Engineer will submit a proposition statement for continuing the services of the draughtsman and the clerk.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with one estimate.
,, Chief Engineer for Irrigation.
,, Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 2nd.

Recd. *Encl.*

G.O., 2nd Aug. 1892, No. 662 I.

AUGUST.

Survey Establishment

Estimate of Rs. 5,150 for — required for investigating upland irrigation projects in the Kistna district, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From W. B. deWINTON, Esq., Superintendent of Works, No. I Periyár Division, to the Chief Engineer, Public Works Department, dated Periyár, 20th July 1892, No. 89 C.E.

I have the honour to forward herewith for sanction an estimate amounting to Rs. 11,200, being cost of the two derrick cranes which were transferred to this division from the Rushikulya division, *vide* your No. 2930 C., dated 15th June 1891.

Order—dated 3rd August 1892, No. 663 I., Public Works.

The following estimate is sanctioned, Rs. 10,990 of the amount being met from the existing balance for tools and plant, Periyár project, and Rs. 210 from the balance of the lump sum for tools and plant placed at the disposal of the Superintendent of Works, No. I Periyár Division:—

Capital Expenditure not charged to Revenue.
49. Irrigation.
Periyár Project.
III. Tools and Plant.
12. Miscellaneous.

	RS.
Cost of two derrick cranes transferred from the Rushikulya division, estimate	11,200

2. This sanction is registered as No. 81 I. of 1892–93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintendent of Works, No. I Periyár Division, with estimate.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 3rd.

Recd. ***Encl.***

G.O., 3rd Aug. 1892, No. 663 I.

AUGUST.

Derrick cranes

Estimate of Rs. 11,200 for the cost of two — transferred from the Rushikulya division for use in No. I Periyár division, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From W. B. deWinton, Esq., Superintendent of Works, No. I Periyár Division, to the Chief Engineer, Public Works Department, dated Periyár, 15th July 1892, No. 79 C.E.

I have the honour to request you will be good enough to obtain the sanction of Government to write off the following amounts to debit of the works noted against each, being advances to labourers outstanding in the miscellaneous advance account since August 1890 and remaining irrecoverable as the parties have left the place and their whereabouts are not known:—

Name.	Outstanding since	Amount.	Work proposed to be charged off to
		RS.	
Mathuva Kunjoo	August 1890.	60	Main dam.
Maniappen Kangany	Do.	21	W. S. tunnel.
Mr. C. Bruce	December 1891.	4	Main dam.

Order—dated 4th August 1892, No. 664 I., Public Works.

The advances aggregating Rs. 85 being irrecoverable will be charged off to the works as proposed by the Superintendent of Works.

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent of Works, No. I Periyár Division.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 4th.

Recd. *Encl.*

G.O., 4th Aug. 1892, No. 664 I.

AUGUST.

Advances

Certain irrecoverable — aggregating Rs. 85 in No. I Periyár division, ordered to be charged off to the works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From the Superintending Engineer,	I Circle,	dated	30th March	1892,	No.	19 G.N.
From „	„ I	„	20th May	„	„	233 „
To „	„ I	„	23rd „	„	„	46 „
From „	„ I	„	29th June	„	„	388 „
Office-note from the Examiner, P.W. Accounts		„	14th July	„	„	221 C.

Revised statement showing the expenditure incurred on tools and plant, Rushikulya project, without the estimates sanctioned by competent authority.

Particulars.	Amount. RS.	A.	P.
December 1891.			
1. One-hundred hand hammers, small	38	8	8
January 1892.			
2. Repairs and carriage of tools and plant	83	5	11
February 1892.			
3. Country rain-gauges with glass measures and three spare glasses ...	36	13	4
4. Repairs and carriage of tools and plant	98	1	1
March 1892.			
5. Repairs and carriage of tools and plant	250	8	9
March 1892 (*Supplemental*).			
6. Repairs and carriage of tools and plant	29	5	0
7. Portable forge	*189	2	8
April 1892.			
8. Two-hundred coir rope and 6 cast steel revetting hammers	38	7	5
9. Repairs and carriage of tools and plant	33	1	9
May 1892.			
10. Repairs and carriage of tools and plant	44	8	5
Total ...	841	15	0

	RS.	A.	P.
* March supplemental	175	0	0
May 1892	14	2	8
Total ..	189	2	8

DOGAM,
22nd June 1892.

(Signed) W. C. DEMORGAN,
Executive Engineer, Rushikulya division.

ORDER—dated 6th August 1892, No. 665 I., Public Works.

The Examiner of Public Works Accounts is authorized to pass the expenditure of Rs. 842 incurred on tools and plant without a sanctioned estimate, the amount required to cover the outlay being met from the balance of the lump sum provision made for tools and plant in the revised estimate for the Rushikulya project, printed in Proceedings of the Madras Government No. 482 I., dated 4th September 1890.

2. This sanction is registered as No. 82 I. of 1892–93.

3. The balance still available for tools and plant is Rs. 3,112.

4. As the amounts of most of the items were within the competence of the Executive Engineer to sanction, he should have sanctioned estimates for them before incurring expenditure, a lump sum to cover such sanctions being previously obtained on application. The Executive Engineer will, in future, adopt this course.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" Examiner, Public Works Accounts.
" Chief Engineer for Irrigation.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 6th.

Recd. *Encl.*

G.O., 6th Aug. 1892, No. 665 I.

AUGUST.

Tools and Plant

Expenditure of Rs. 842 incurred on — without a sanctioned estimate in connection with the Rushikulya project, ordered to be admitted with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

Endt. from the Superintending Engineer, II Circle, dated	2nd April 1892,	No.	21	K.S.
Memo to " " II " "	27th May "	"	109	"
Letter from " " II " "	12th July "	"	958	"

No. 129 I.

Submitted to Government. As there are only four navigation lascars connected with the lock, only four sheds for them and one for the superintendent need be provided. The estimate has therefore been reduced in this office from Rs. 2,060 to Rs. 1,530.

Ootacamund,
25th July 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 6th August 1892, No. 666 I., Public Works.

The following estimate is sanctioned from the balance of the lump sum provision available for unforeseen works of the Kistna delta system, which will then be reduced to Rs. 84,670 :—

Capital Expenditure not charged to Revenue.
49. Irrigation.
Kistna Delta System.
Eastern Section.
I. Works.
(2) Main Canals and Branches.
Masulipatam Canal.
K. Buildings.

	RS.
Quarters for lock establishment at Nedumole, estimate	1,530

2. This sanction is registered as No. 83 I. of 1892–93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with enclosures.
" Examiner, Public Works Accounts.
" Chief Engineer for Irrigation.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 6th.

Recd. *Encl.*

G.O., 6th Aug. 1892, No. 666 I.

AUGUST.

Kistna Delta System

Quarters.—Estimate of Rs. 1,530 for — for lock establishment at Nedumole, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 10th July 1892, No. 432 G.N.

I have the honour to forward, herewith, plans and estimate, amounting to Rs. 810, for a distributary from $16\frac{3}{4}$ miles + 250 feet, left bank, of the Rushikulya canal, and to request that you will be so good as to obtain sanction of Government to the same.

2. The proposed channel is $2\frac{1}{4}$ miles in length and the estimated cost per mile is Rs. 360.

3. A report explaining the arrangement of the distributary accompanies the letter.

ENCLOSURE.

REPORT accompanying the estimate for a distributary from $16\frac{3}{4}$ miles + 250 feet, left bank, Rushikulya canal.

This distributary will irrigate altogether 2,600 acres—1,600 in Kurla zamindari and 1,000 in the Chinna Kimedi estate.

2. The discharge required is 32 cubic feet per second.

3. The head sluice is sanctioned and work commenced.

4. At the head 7 cubic feet per second are drawn off to supplement the irrigation of a small area now supplied by drainage through under-tunnel No. 11.

5. Beyond this no land is irrigated until the tail of the channel is reached, when the balance of discharge, 25 cubic feet per second, will be distributed through existing channels.

6. The channel is designed with an uniform slope of 8 feet per mile, bottom width 2′ depth of water $2\frac{1}{2}$, velocity 2·2′ per 1″.

7. Immediately at head the bottom width of channel is $2\frac{1}{2}$′ to pass the whole 32 cubic feet per second.

8. There are no masonry works required on the channel.

9. The land on either side of the channel is waste and forms the subject of dispute between the two estates. It has never been cultivated and probably never will be, but, as it falls away rapidly on either side, it would always be possible to supply it by excavating small bodis or cuts from the main channel.

(Signed) W. C. DEMORGAN,
Executive Engineer, Rushikulya division.

18th June 1892.

ORDER—dated 6th August 1892, No. 667 I., Public Works.

The following estimate is sanctioned from the sum of Rs. 83,520 provided for irrigation channels of the Rushikulya canal in the revised estimate for the Rushikulya project printed in Proceedings of the Madras Government, No. 482 I., dated 4th September 1890 :—

Famine Relief and Insurance.
35. Protective Irrigation Works.
Rushikulya Project.
I. Works.
Rushikulya Canal.
(3) Distributaries.
L. Earthworks.

	RS.
Excavating a distributary from 16¾ miles 250 feet, left bank, estimate	810

2. This sanction is registered as No. 84 I. of 1892–93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, I Circle, with four enclosures.
,, Examiner, Public Works Accounts.
,, Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 6th.

Recd. *Encl.*

G.O., 6th Aug. 1892, No. 667 I.

AUGUST.

Rushikulya Project

Distributary.—Estimate of Rs. 810 for excavating a — from $16\frac{3}{4}$ miles 250 feet, left bank, Rushikulya canal, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read —the following papers :—

Proceedings of the Board of Revenue, Land Revenue, dated 17th April 1888, No. 367.
" " " " " 19th May " " 455.

From J. D. GRANT, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 6th December 1889, No. 386 V.Z.

No. 636 I., dated 1st Oct. 1880.
" 360 I. " 20th June 1888.
" 389 I. " 3rd July "

With reference to the Government orders noted in the margin, I have the honour to submit, herewith, plans and estimates, amounting in the aggregate to Rs. 4,675, for the improvements to the Neelanagaram channel in the Pálkonda taluk in the Vizagapatam district, and to request that you will be so good as to obtain the sanction of Government to the same. The plans and estimates have been countersigned by the Collector in token of his approval. The Neelanagaram channel is one of the eight irrigation systems of the Pálkonda taluk and the Division officer says that the estimates for the other systems are now under preparation, but, owing to the very wet season, there has been unavoidable delay in the field work and that the estimates will be submitted as soon as possible in order of their preparation.

2. I request that early sanction may be obtained to the estimates now submitted as the work can only be carried out for about three months (15th March—15th June) owing to water being required for cultivation. A report accompanies the estimate.

3. There are some points which may be altered in execution, such as the preparation of concrete, the length of flood bank; but I have not thought it desirable to alter the estimate till it has passed through your hands. The alterations I consider necessary will not add materially to the cost of the work.

Memo. to the Superintending Engineer, I Circle, dated 30th Dec. 1889, No. I/12 V.Z.
Letter from " " " 7th Oct. 1891 " 430 V.Z.

Memo. to the Superintending Engineer, I Circle, dated 21st October 1891, No. I/14 V.Z.

With reference to para. 1 of the above letter, the undersigned has the honour to refer the Superintending Engineer to memos. Nos. $\frac{1}{3}$ V.Z., dated 1st April 1889, $\frac{1}{12}$ V.Z., dated 30th December 1889, $\frac{1}{20}$ V.Z., dated 1st December 1890, No. 3 I., dated 26th May 1891, para. 2.

2. The delay about the matter is discreditable to the Executive Engineers who have held charge of the Vizagapatam district since the issue of G.O., No. 360 I., dated 20th June 1888.

3. The Superintending Engineer will be good enough to give the subject his personal attention and see that the comparatively simple matter, which has been now upwards of three years in hand, is no longer allowed to remain undealt with.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 11th June 1892, No. 239 V.Z.

I have the honour to resubmit herewith the plans and estimates, as specified in the margin, amounting to Rs. 7,870, for improvements to Neelanagaram channel, Pálkonda taluk, in the Vizagapatam district, duly revised in accordance with instructions contained in your memorandum No. I/12 V Z., dated 30th December 1889, for your approval and sanction of Government.

	Estimate. RS.
Constructing a flood bank along the right bank of Neelanagaram channel.	550
Widening and clearing Neelanagaram channel	1,300
Improvements to the aqueduct across Nandivada Tampara	530
Cutting a surplus channel in rear of new surplus sluice	370
Constructing a dividing sluice at the head of the branch channel ...	350
Constructing a head sluice to Neelanagaram channel	2,450
Constructing a surplus sluice ...	2,320

2. The estimates have been duly countersigned by the Collector.

3. With reference to the surplus sluice to discharge the drainage of 1 square mile, I suggested to the Executive Engineer the advisability of a simple sluice with the swing shutters with the crest of the work raised to 119 85 or channel F.S.L., but the Executive Engineer states that as the channel silts up considerably, it is not advisable to raise sill of the surplus sluice above channel bed level.

4. The original plans are also submitted for reference.

Enclosure.

Report to accompany the estimates for improving the Neelanagaram channel, Pálkonda taluk.

Position and course of channel.—The Neelanagaram channel is the first irrigation channel from the Nagavali river in the Pálkonda taluk. It takes off from the left bank of the river just below Palametta Agraharam (*vide* skeleton map sheet No. 1) and runs nearly parallel to the river for a distance of two miles. It then turns to the left and runs round the Betewada Tampara towards the village of Motta, below which it divides into three branches. The total length of the channel from its head to where it branches is 4¼ miles. Of these three branch channels, the one on the left irrigates the lands of Kumaragunta and Neelanagaram villages, the centre one the lands of Kumaragunta village only, and the right or third one irrigates the lands of Nandivada Agraharam and also of Talavaram village, the channel being carried across the Nandivada Tampara drainage channel by an aqueduct. The channel carrying the drainage of the abovementioned Tampara runs under the aqueduct and, at a distance of about 7 furlongs, divides into three branches. The first or right branch irrigates the lands of Gopidevipet Agraharam, while the second and third branches irrigate the lands of Chinnamangalapuram and Bookoor villages respectively and end in a drainage stream. This stream joins Surinaidu Batta (the third irrigation channel from the left bank of the Nagavali river) at about 5 furlongs below its head, and the Batta serves as a feeder to Dasabatta, another irrigation channel lower down.

2. *Present state of the channel.*—The Neelanagaram channel has no head sluice nor any cross drainage work to dispose of the Palametta Tampara drainage which enters the channel by three drains between the 2nd and 7th furlongs of the first mile (*vide* plan sheet No. 2). This causes the breach in the right bank of the channel at the 5th furlong, and, though the breach is closed

by the renters, it recurs year after year; thus the necessary supply does not pass down the channel during the cultivating season. During the last 4 or 5 years the breach under reference has increased in width and depth, and the bed-fall of the channel above having increased a large quantity of water enters the channel by its head at every rise of the river and finds its way back through the breach below. In consequence the channel from its head down to the breach has increased in width, from 24 to 40 feet. Below the breach the channel has silted up for about a mile or more. Below the 2nd mile down to Motta it is in working order. The bed-falls of the three branch channels below Motta vary and a dividing sluice is therefore necessary. In its present state the branch for Nandivada and Talavaram lands takes too much water from the main channel and the ryots have occasionally to construct a dam across its head to divert the required supply to the other branches.

3. *Repairs to the aqueduct.*—The old aqueduct carrying the southern branch channel over the Nandivada Tampara drainage channel with two vents each 3′ × 4′ was for a long time in bad repair. Five years ago the main portion of this aqueduct, consisting of the vents, pier, abutments and face walls, was rebuilt by the renters of the taluk, the vents being increased to 3′ × 5′, and now the aqueduct is in working order. During high floods the river runs through the channel below from the surplus cut, 3½ furlongs below the aqueduct, and submerges the Nandivada Tampara and lowlands of Neelanagaram and Kumaragunta. To prevent this, the vents of the aqueduct require shutters. A branch of the channel takes off at the north end of the aqueduct. This constantly breaches into the drainage channel below close to the aqueduct; the ryots have to close this breach every time they want water in the branch channel. To prevent the recurrence of the breach and the erosion taking place on the other side of the drainage channel, wing walls will be added to the aqueduct on its lower side. In a prolongation of the side wall of the aqueduct, there are 2 vents each 2′ × 2½′ to supply the branch channel above referred to; but this water-way not being sufficient, both vents will be made 2½′ × 2¾′. All the branch channels of the Neelanagaram channel and of the Tampara channel lower down are maintained by the ryots and are in working order.

4. *Works proposed.*—The works required for improving the Neelanagaram channel are as follows:—

	RS.
(1) Constructing a head sluice	2,450
(2) Constructing a flood bank along the right bank of the channel, 1st mile, including the closing of the breach at the 5th furlong	550
(3) Constructing a surplus sluice in the 7th furlong to dispose of the Palametta Tampara drainage and cutting a surplus channel in rear	2,320 + 370
(4) Widening the channel and clearing silt from the breach up to 2nd mile	1,300
(5) Constructing a dividing sluice at the head of branch channels near Motta	350
(6) Improvements to the aqueduct across Nandivada Tampara	530
Total ...	7,870

5. (1) *Head sluice.*—The site for the head sluice will be 81 yards below the head (measuring along the north bank of the channel) or 200 yards below Palametta Agraharam (*vide* plan sheet No. 5). The bottom width of the channel here is 32 feet and no narrower place is available within a reasonable distance lower down. The sill of the sluice will be at R.L. 118·50. Four vents of 4 feet each are allowed, and screw shutters as recommended by the Chief Engineer for Irrigation.

Vide sheet No. 6.

(2) *Bund along the right bank of the channel.*—The bank or ground between the channel and river is higher than M.F.L. (of the river) for a distance of 3 furlongs, but below this down to the breach at the 5th furlong of the channel the ground is lower than M.F.L. and the river floods overflow into and damage the channel. It is proposed to construct a bund from point B down to the other side of the breach (*vide* plan sections sheet No. 2). The ground along the channel edge being too low, the bund west of the breach has been taken along the high ground independent of the channel bank and connected with the nearest available high ground at B, which is 2 feet higher than M.F.L. The breach will be closed, care being taken to clear the loose silt from its site and to use the best earth available in making the bund. The lands Nos. 1, 2, 3, 4, 5 (longitudinal section) that will be occupied by the proposed bund are all dry lands of Palametta Agraharam and compensation is allowed in the estimate. Land No. 6 is waste, being the channel bank, and no compensation is necessary.

(3) *Surplus sluice.*—The Palametta Tampara is in two portions as shown in plan sheet No. 2. The higher receives the drainage of Vandaram hills, &c., and drains into the Neelanagaram channel through the drainage channel No. I at the 3rd furlong. The lower portion receives the drainage of Chabiyiamvalsa highlands and drains into the channel below the breach through drainage channels Nos. 2 and 3 a little below the 5th and 6th furlongs respectively. The places where these several drainages join the channel are shown in skeleton map No. 2 and plan sheet No. 2. The drainage basin of the whole Tampara is one square mile and the drainage by formula $D = 400\ M^{\frac{3}{4}}$ being 400 cubic feet, a surplus sluice is necessary. It will have 4 vents each 4 feet wide with screw shutters. A new surplus channel will be cut in rear (*vide* section on the sketch sheet No. 9), 33 feet bottom width and side slopes of $1\frac{1}{2}$ to 1.

Vide sheet No. 7.

Vide sheet No. 8.

(4) It is proposed to widen and clear out the channel from the breach to the 2nd mile, giving it a bottom width of 15 feet, side slopes of 1 to 1 and a bed-fall of 2 feet per mile. The channel below this requires no repairs.

(5) *Dividing sluice* will be constructed as shown in the plan and estimate. The water-way for the left and right branches will be 7 and $5\frac{1}{2}$ feet respectively, and a vent of $2\frac{1}{4} \times 2\frac{1}{4}$ in the centre wing wall will be sufficient for the centre branch.

Vide sheet No. 10.

(6) *Improvements to the aqueduct.*—The main portion of the aqueduct being in good order will be retained, but the old north-east wing wall will be rebuilt. The vents for the branch channel will be increased to $2\frac{1}{2}' \times 2\frac{3}{4}'$, and as this parapet of the aqueduct carries a public path-way, the vents will be covered with a platform of granite slabs. The other wings and parapets will be raised to the same height as the new wing; a shutter platform with wings will be attached to the vents below. Sundry repairs to floors of vents and channel above may be necessary and a lump sum is provided for this in the estimate.

6. *Cultivation under the channel.*—The Neelanagaram channel irrigates 2,350 acres; of this its left, centre, and right branch channels near Motta have to supply water to 1,100, 100 and 900 acres of cultivation respectively.

7. (1) *Supply and drainage.*—The supply of water required for the whole channel is 44 cubic feet per second and more than this will be available when there is a depth of 1 foot in rear of the head sluice and a head of 3 inches. The dimensions of the dividing sluice have been fixed as follows; of the 44 cubic feet per second assumed to be passing down the channel, the Betwada lands (250 acres above the dividing sluice) will take 4·68 cubic feet, leaving 39·32 cubic feet of supply available at the dividing sluice with 2 feet of water. The 1,100 acres of lands under the left branch channel will require 20·62 cubic feet and the water-way of 7 feet of the dividing sluice will carry this discharge, the fall of the branch channel in rear being nearly 3 feet per mile. The 900 acres of land under the right branch channel will require a supply of 16·82 cubic feet and the water-way of $5\frac{1}{2}$ feet will supply this discharge. The 100 acres under the centre branch will require 1·88 cubic feet and its vent of $2\frac{1}{2}$ feet will give a discharge of 4·10 cubic feet, the fall being 2 feet per mile. This excessive water-way is allowed as this branch has a small bed-fall and as the area under it is small.

(2) During heavy floods the head sluice will be kept shut. The drainage of Palametta Tampara received into the channel above surplus sluice will be about 400 cubic feet per second as already stated. The surplus sluice will as a rule easily dispose of all this, and if there should be any excess or if a flood in the river should prevent discharge through the sluice (which is improbable), a large quantity can still be safely passed down the channel, which is capable of taking more than 4 feet depth of water.

WALTAIR,
10th December 1891.

(Signed) J. TRAILL,
Executive Engineer, Vizagapatam Division.

Letter from the Superintending Engineer, I Circle, dated 10th July 1892, No. 304 V.Z.

No. 130 I.

Note by the Chief Engineer for Irrigation.

The delay of nearly $2\frac{1}{2}$ years in attending to Memo. No. I/12 V.Z., dated 30th December 1889, is reprehensible; for it Mr. Traill, who was Executive Engineer of the division from January 1890 till he went on leave in April, is chiefly responsible.

2. The estimates, as now submitted, are recommended for sanction with the following remarks :—

(*a*) It is said in the report that for the proposed head sluice "screw shutters" are provided "as recommended by the Chief Engineer for Irrigation," but this is not correct. In the memorandum above quoted it was said "as the shutters are to be *baulks* there is no object in making the vents of small width and they certainly may with advantage be at least 6 feet wide." The advisability of providing screw gearing will depend on the probability of getting such apparatus properly attended to and worked; and the Superintending Engineer will, before putting the work in hand, look into the matter and decide whether *baulks*, placed in charge of the interested villagers, will not be best suited to the localities and will make any change in the designs that may be necessary.

(*b*) Various remarks have been entered on the plans which should receive attention.

OOTACAMUND,
25th July 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 6th August 1892, No. 668 I., Public Works.

The following estimate is sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.
Original Works.
Vizagapatam Division.

	RS.
Improvements to Neelanagaram channel, estimate	7,870

2. This sanction is registered as No. 85 I. of 1892-93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle, with 34 enclosures.
" Examiner, Public Works Accounts.
" Chief Engineer for Irrigation.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 6th.

Recd. *Encl.*

G.O., 6th Aug. 1892, No. 668 I.

AUGUST.

Neelanagaram Channel

Estimate of Rs. 7,870 for improvements to — in the Vizagapatam district, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

From the Officiating Under-Secretary to the Government of India, Public Works Department (Account—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, the 15th July 1892, No. 66 A.I.

At present no uniform system is adopted throughout India in classifying minor irrigation works for which Capital and Revenue accounts are kept. The Government of India therefore considers it desirable that some general rule should be laid down defining the class of minor irrigation works for which Capital and Revenue accounts should be maintained.

2. I am accordingly directed to forward, for the information of the Government of Madras, a copy of a draft rule, which it is proposed to issue, with a request that the Government of India may be informed, at an early date, whether in the opinion of the Government of Madras the proposed rule is considered desirable as regards irrigation works in Madras and whether the limit of Rs. 50,000 therein proposed is suitable.

ENCLOSURE.

Draft Rule.

Capital and Revenue accounts should be kept of all new minor irrigation works whether entirely constructed, or merely remodelled and restored, by the British Government, the estimated capital outlay on which is more than Rs. 50,000 inclusive of establishment and tools and plant charges, provided there is good reason to anticipate that the revenue derived therefrom will more than cover the working expenses, direct and indirect.

If for any reason a project, the estimated outlay on which is as above stated, is considered to be of insufficient importance to justify the maintenance of a capital account, or if any difficulty be anticipated in ascertaining the correct revenue, it may, with the approval of the Government of India, be classed as a work for which neither Capital nor Revenue accounts are kept or as a work for which only Revenue accounts are kept as the case may be.

ORDER—dated 9th August 1892, No. 676 I., Public Works.

Communicated to the Chief Engineer for Irrigation for information and guidance.

2. Ordered that the following letter be sent.

(Here enter No. 677 I., Public Works, dated 9th August 1892.)

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation,
with copy of letter to Government of India.
„ Superintending Engineers.
„ the Examiner, Public Works Accounts.
„ the Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 9th.

Recd. *Encl.*

G.O., 9th Aug. 1892, No. 676 I.

AUGUST.

Minor Irrigation Works

Letter to be forwarded to the Government of India expressing the opinion of this Government regarding certain draft rule proposed for keeping Capital and Revenue accounts of all new — up to a certain limit.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Letter—from

G. T. WALCH, Esq.,
Joint Secretary to the Government of Madras,
Public Works Department,
Irrigation Branch,

To

The SECRETARY to the GOVERNMENT of INDIA,
Public Works Department.

Sir,

With reference to your letter, No. 66 A.I., dated 15th July 1892, I am directed to say that assuming the word "new" in the "draft rule" to refer only to works to be hereafter undertaken, this Government is of opinion that the proposed rule is desirable and that the limit of Rs. 50,000 is suitable.

I have the honour to be,
Sir,
Your most obedient servant,

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

Ootacamund,
9th August 1892.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 9th.

Recd. *Encl.*

9th Aug. 1892, No. 677 I.

AUGUST.

Minor Irrigation Works

Stating, with remarks, that the draft rule proposed as to keeping Capital and Revenue accounts of all new — is desirable and that the limit of Rs. 50,000 is suitable.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

From G. E. MANSON, Esq., Executive Engineer, Salem division, to the Superintending Engineer, IV Circle, dated 29th July 1892, No. 364 S.E.

I have the honour to request that you will be good enough to obtain the necessary sanction of Government for the distribution of Rs. 5,000 allotted to this division for the current year under Irrigation Cess fund (*vide* G.O., No. 128 I., dated 9th February 1892) between original works and repairs as noted below:—

	RS.
Original works	3,000
Repairs	2,000
Total ...	5,000

2. This distribution is needed to avoid the objection raised by the Examiner.

No. 159 E.I.

Submitted to the Chief Engineer for Irrigation for favour of obtaining sanction of Government to the distribution proposed in the foregoing letter.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Superintending Engineer, IV Circle.

30th July 1892.

ORDER—dated 9th August 1892, No. 679 I., Public Works.

The proposed re-distribution, by departmental heads, of the current year's grant from Local Irrigation Cess fund for the Salem division is approved.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, IV Circle.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 9th.

Recd. *Encl.*

G.O., 9th Aug. 1892, No. 679 I.

AUGUST.

Funds

The proposed re-distribution, by departmental heads, of the current year's grant from Local Irrigation Cess fund for the Salem division, approved.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From J. HANNAN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 6th June 1892, No. 138 N.L.

I have the honour to submit, herewith, for sanction of Government, a revised estimate for Rs. 18,900 for the restoration of Griddalore tank in Rápúr taluk of the Nellore district (No. 183-A in the list of Imperial works) in supersession of the estimate for Rs. 16,600, sanctioned in G.O., No. 277 I., dated 21st March 1891.

2. The causes of difference have been explained in the comparative statement accompanying the estimate.

Memo. to the Superintending Engineer, II Circle, dated 11th June 1892, No. II/39 N.L.
Endt. from „ II „ 20th July „ „ 243 „

No. 132 I.

Note by the Chief Engineer for Irrigation.

The excess cost is due almost entirely to an alteration in the site for the weir which the Superintending Engineer considered it advisable to make.

2. The revised estimate is recommended for sanction.

OOTACAMUND,
29th July 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 10th August 1892, No. 680 I., Public Works.

The following revised estimate is sanctioned in supersession of the estimate for Rs. 16,600, sanctioned in G.O., No. 277 I., dated 21st March 1891 :—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.
Original Works.

	RS.
Restoring Griddalore tank, No. 183-A of list of works in the Nellore division, appended to G.O., No. 407 I., dated 6th July 1887, estimate.	18,900

2. This sanction is registered as No. 86 I. of 1892–93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with five enclosures.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 10th.

Recd. *Encl.*

G.O., 10th Aug. 1892, No. 680 I.

AUGUST.

Griddalore Tank, Nellore Division

Revised estimate of Rs. 18,900 for restoring the —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

Procs. of the Board of Revenue, Land Revenue,	dated	17th April 1888,	No.	367, Rev.
" " "	"	19th May "	"	455 "
Memo. to the Superintending Engineer, I Circle	"	1st April 1889	"	I/2 V.Z.
Letter from " " "	"	7th Oct. 1891	"	430.
Memo. to " " "	"	21st " "	"	14 V.Z.

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 18th June 1892, No. 243 V.Z.

In reference to your memo. No. I/2 V.Z. of 1st April 1889, No. I/14 V.Z., dated 21st October 1891, and No. 3 I., dated 26th May 1891, and in continuation of my letter No. 239 V.Z., dated 11th June 1892, I have the honour to submit, herewith, plans and estimates, amounting to Rs. 21,600, for the works specified below, connected with Nagavalli river in Pálkonda taluk of the Vizagapatam district, for your approval and sanction of Government :—

	Estimate. RS.
Strengthening the right flood bank of the Nagavalli river in the limits of Rajulagumada village	250
Constructing left flood bank for the Nagavalli river between Annaveram and Ampilli villages	5,700
Constructing left flood bank for the Nagavalli river just above Nandivada agraharam	3,400
Constructing left flood bank for the Nagavalli river just below Nandivada agraharam	640
Constructing right flood bank to Vottigedda stream below Dasamanthapuram village	1,750
Closing Ampilli gap in the left bank of the Nagavalli river ...	4,000
Constructing left flood bank to Nagavalli river at Gotta Mangalapuram	4,280
Constructing a groyne at the head of Vottigedda stream below Dasamanthapuram village and diverting the gedda into its original course	1,580
Total ..	21,600

2. These estimates provide for all the necessary flood banks with the exception of one (E ; see general report and sketch-map).

3. In preparing the sections for the banks, the ascertained M.F.L. of 1876 flood (highest recorded) has been followed, the top being kept everywhere 3′ above M.F.L.

4. The report attached to the estimate of each component work explains what is proposed to be done for each bank.

No. 131 I.

Note by the Chief Engineer for Irrigation.

In "note" on the estimates for improvement of the Neelanagaram channel from the Nagavalli river dealt with in G.O., No. 668 I., dated 6th August 1892, the great delay in attending to that matter was commented on and similar remarks are applicable in this case.

2. The estimates now submitted for embanking, where necessary, the Nagavalli river, Pálkonda taluk, Vizagapatam district, are recommended for sanction with the following exceptions, viz. : —

(*a*) *Constructing right flood bank to the Vottigedda stream below Dasamanthapuram village, Rs.* 1,750, *and constructing a groyne at the bend of the Vottigedda stream below Dasamanthapuram village and diverting the gedda into its original course, Rs.* 1,580.—It is extremely doubtful if the groyne proposed would achieve the result desired and it would probably be better, if a right flood bank is required at the place to protect valuable lands, to place that bank further back from the margin.

(*b*) *Closing Ampilli gap, Rs.* 4,000.—The river at the place is trying to straighten its course and to close the head of the new channel will cause severe erosion on the right margin at the bend, which is inadvisable, unless the land there is for some distance back of little value, about which nothing is said.

3. The Superintending Engineer has made no provision in the estimates for demarcation stones: this omission has now been supplied and the estimates, as modified in this office, aggregate Rs. 14,400.

OOTACAMUND,
6th August 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 10th August 1892, No. 681 I., Public Works.

The following estimates are sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Agricultural Works.
River Embankments.
Original Works.
Vizagapatam Division.

	RS.
1. Strengthening the right bank of Nagavalli river in the limits of Rajulagumada village	250
2. Constructing left flood bank for the Nagavalli river above Nandivada agraharam	3,430
3. Constructing left flood bank to the Nagavalli river below Nandivada agraharam	660
4. Constructing left bank of Nagavalli river at Gotta Mangalapuram.	4,330
5. Constructing left bank for the Nagavalli river between Annaveram and Ampilli villages	5,730
Total ...	14,400

2. This sanction is registered as No. 87 I. of 1892–93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle, with 40 enclosures.
" Examiner, Public Works Accounts.
" Chief Engineer for Irrigation.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 10th.

Recd. *Encl.*

G.O., 10th Aug. 1892, No. 681 I.

AUGUST.

Nagavalli River

Estimates, aggregating Rs. 14,400, for en banking the — in the Pálkonda taluk, Vizagapatam district, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From the Officiating Under-Secretary to the Government of India, Public Works Department (Account—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 12th July 1892, No. 65-A.I.

I am directed to point out that in the budget estimate of Major Irrigation Works, Madras, for 1892–93 no details have been given showing how the indirect revenue collected in the Civil Department has been arrived at. These details were specially called for in Public Works Department letter No. 63-A.I., dated the 20th April 1883, and were furnished in the budget estimates up to 1891–92.

2. As the details of indirect revenue are required by the Government of India for various purposes, I am directed to request that the details for 1892–93 may be furnished as soon as possible, and that similar information may be given in the budget estimates of Major Irrigation Works for future years.

3. The detailed statement of indirect revenue should be prepared in the form adopted up to 1891–92, the amounts annually credited to each project at 4 per cent. on the sale-proceeds of tank-bed lands and of occupancy rights of waste lands being shown distinctly after the entry "net revenue."

4. I am also desired to state that parts II, III, V and VI of the budget estimates of the Irrigation Branch should, as required by note 2 on Public Works Department Form No. 127, be excluded from the final issues submitted to the Government of India in future.

No. 133 I.

Note by the Chief Engineer for Irrigation.

The accompanying memorandum showing the details of the estimates of indirect revenue of "Major Works" collected in the Civil Department is submitted for transmission to the Government of India with reference to para. 2 of its letter No. 65-A.I., dated 12th July 1892.

2. The omission of the details in the budget estimates for 1892–93 is due to the instructions contained in the Government of India letter No. 54-A.I. of 26th May 1891, printed in Proceedings of the Madras Government, No. 471 I., dated 4th June 1891, to the effect that the standard form, No. 127, of Form Book Part III should be adhered to. In this form the revenue of each system is shown in one line without any details. The preliminary budget was prepared accordingly, and the Government of India did not, in its orders thereon, draw attention to the fact that the details hitherto given were still required. These details will be shown in future budget estimates.

3. The budget estimates of indirect revenue as furnished by the Board of Revenue do not include the amounts to be credited to each system at 4 per cent. on the sale-proceeds of tank-beds and other waste lands.

4. The instructions in para. 4 of the Government of India letter will be attended to in future budget estimates.

Ootacamund,
29th July 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ENCLOSURE.

MEMORANDUM of Indirect Revenue to be credited to each Irrigation System classed under "Major Works."

——	Actuals, 1890-91.	Budget estimate, 1891-92.	Revised estimate, 1891-92.	Budget estimate, 1892-93.
XXIX. MAJOR WORKS.	RS.	RS.	RS.	RS.
Portion of Land Revenue due to Irrigation.				
Godávari Delta—				
Irrigation revenue	21,16,905	22,00,000	21,20,000	21,80,000
Deduct revenue due to old irrigation	1,24,000	1,24,000	1,24,000	1,24,000
Increase of Irrigation revenue	19,92,905	20,76,000	19,96,000	20,56,000
Share of enhanced land revenue	1,58,088	1,60,000	1,58,000	1,59,000
Total ..	21,50,993	22,36,000	21,54,000	22,15,000
Deduct collection charges in the Civil Department..	1,07,549	1,11,800	1,07,700	1,10,750
Net Revenue ..	20,43,444	21,24,200	20,46,300	21,04,250
Four per cent. on sale-proceeds of tank-bed and other waste lands less 5 per cent. for collection charges	3,584	..	..	..
Total ..	20,47,028	21,24,200	20,46,300	21,04,250
Or say ..	20,47,028	21,24,200	20,46,000	21,04,000
Kistna Delta—				
Irrigation revenue	16,52,779	16,00,000	16,64,000	16,65,000
Deduct revenue due to old irrigation	71,000	71,000	71,000	71,000
Increase of Irrigation revenue	15,81,779	15,29,000	15,93,000	15,94,000
Share of enhanced land revenue	1,72,623	1,85,000	1,74,000	1,74,000
Total ..	17,54,402	17,14,000	17,67,000	17,68,000
Deduct collection charges in the Civil Department..	87,720	85,700	88,350	88,400
Net Revenue ..	16,66,682	16,28,300	16,78,650	16,79,600
Four per cent on sale-proceeds of tank-bed and other waste lands less 5 per cent. for collection charges	7,930	..	..	..
Total ..	16,74,612	16,28,300	16,78,650	16,79,600
Or say ..	16,74,612	16,28,300	16,79,000	16,80,000
Pennér Anicut—				
Irrigation revenue	2,40,028	2,50,000	2,45,000	2,50,000
Deduct revenue due to old irrigation	1,17,000	1,17,000	1,17,000	1,17,000
Increase of Irrigation revenue	1,23,028	1,33,000	1,28,000	1,33,000
Share of enhanced land revenue	17,842	17,000	16,000	17,000
Total ..	1,40,870	1,50,000	1,44,000	1,50,000
Deduct collection charges in the Civil Department..	7,043	7,500	7,200	7,500
Net Revenue ..	1,33,827	1,42,500	1,36,800	1,42,500
Four per cent. on sale-proceeds of tank-bed and other waste lands less 5 per cent. for collection charges	958	..	..	..
Total ..	1,34,785	1,42,500	1,36,800	1,42,500
Or say ..	1,34,785	1,42,500	1,37,000	1,43,000
Sangam Anicut—				
Irrigation revenue	2,65,744	3,00,000	2,84,000	2,84,000
Deduct revenue due to old irrigation	1,39,000	1,39,000	1,39,000	1,39,000
Increase of Irrigation revenue	1,26,744	1,61,000	1,45,000	1,45,000
Share of enhanced land revenue	7,913	12,000	11,000	11,000
Total ..	1,34,657	1,73,000	1,56,000	1,56,000
Deduct collection charges in the Civil Department..	6,732	8,500	7,800	7,800
Net Revenue ..	1,27,925	1,64,500	1,48,200	1,48,200
Four per cent. on sale-proceeds of tank-bed and other waste lands less 5 per cent. for collection charges	1,540	..	..	..
Total ..	1,29,465	1,64,500	1,48,200	1,48,200
Or say ..	1,29,465	1,64,500	1,48,000	1,48,000

Memorandum of Indirect Revenue to be credited to each Irrigation System, &c.—*cont.*

——	Actuals, 1890-91.	Budget estimate, 1891-92.	Revised estimate, 1891-92.	Budget estimate, 1892-93.
XXIX. MAJOR WORKS—*cont.*	RS.	RS.	RS.	RS.
Portion of Land Revenue due to Irrigation—cont.				
Barúr Tank—				
Irrigation revenue	7,391	10,000	10,000	12,000
Deduct revenue due to old irrigation	2,000	2,000	2,000	2,000
Increase of Irrigation revenue	5,391	8,000	8,000	10,000
Share of enhanced land revenue	6	..	..	..
Total ..	5,397	8,000	8,000	10,000
Deduct collection charges in the Civil Department..	270	400	400	500
Net Revenue ..	5,127	7,600	7,600	9,500
Four per cent. on sale-proceeds of tank-bed and other waste lands less 5 per cent. for collection charges	..	..	..	..
Total ..	5,127	7,600	7,600	9,500
Or say ..	5,127	7,600	7,000	9,000
Cauvery Delta—				
Irrigation revenue	29,64,258	31,00,000	29,70,000	31,00,000
Deduct revenue due to old irrigation	23,65,000	23,65,000	23,65,000	23,65,000
Increase of Irrigation revenue	5,99,258	7,35,000	6,05,000	7,35,000
Share of enhanced land revenue	1,41,451	2,02,000	1,42,000	1,42,500
Total ..	7,40,709	9,37,000	7,47,000	8,77,500
Deduct collection charges in the Civil Department..	37,035	46,700	37,350	43,875
Net Revenue ..	7,03,674	8,90,300	7,09,650	8,33,625
Four per cent. on sale-proceeds of tank-bed and other waste lands less 5 per cent. for collection charges	..	..	..	..
Total ..	7,03,674	8,90,300	7,09,650	8,33,625
Or say ..	7,03,674	8,90,300	7,10,000	8,34,000
Srivaikuntham Anicut—				
Irrigation revenue	1,34,083	1,85,000	1,66,000	1,66,000
Deduct revenue due to old irrigation	79,000	79,000	79,000	79,000
Increase of Irrigation revenue	55,083	1,06,000	87,000	87,000
Share of enhanced land revenue	1,766	2,000	2,000	2,000
Total ..	56,849	1,08,000	89,000	89,000
Deduct collection charges in the Civil Department..	2,842	5,400	4,450	4,450
Net Revenue ..	54,007	1,02,600	84,550	84,550
Four per cent. on sale proceeds of tank-bed and other waste lands less 5 per cent. for collection charges	..	..	..	..
Total ..	54,007	1,02,600	84,500	84,550
Or say ..	54,007	1,02,600	85,000	85,000
Kurnool-Cuddapah Canal—				
Share of enhanced land revenue under tanks owing to the supply of canal water	28,802	..	..	..
Deduct collection charges in the Civil Department..	1,440	..	..	..
Net Revenue ..	27,362	..	..	..
Total of all Systems—				
Irrigation revenue	73,81,188	76,45,000	74,59,000	76,57,000
Deduct revenue due to old irrigation	28,97,000	28,97,000	28,97,000	28,97,000
Increase of Irrigation revenue	44,84,188	47,48,000	45,62,000	47,60,000
Share of enhanced land revenue	5,28,491	5,78,000	5,03,000	5,05,500
Total ..	50,12,679	53,26,000	50,65,000	52,65,500
Deduct collection charges in the Civil Department..	2,50,631	2,66,000	2,53,250	2,63,275
Net Revenue ..	47,62,048	50,60,000	48,11,750	50,02,225
Four per cent. on sale-proceeds of tank-bed and other waste lands less 5 per cent. for collection charges	14,012	..	..	..
Total ..	47,76,060	50,60,000	48,11,750	50,02,225
Or say ..	47,76,060	50,60,000	48,12,000	50,03,000

OOTACAMUND,
29th July 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

ORDER—dated 11th August 1892, No. 682 I., Public Works.

Orders will be issued in the Revenue Department that the amounts to be credited to each system of irrigation under Major Works at 4 per cent. on the sale-proceeds of tank-bed and other waste lands may be shown distinctly in future budget estimates of Irrigation revenue to be submitted by the Board of Revenue.

2. Ordered that a copy of these Proceedings be forwarded to the Government of India with reference to its letter No. 65-A.I., dated 12th July 1892.

(Here enter No. 683 I., Public Works, dated 11th August 1892.)

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.
„ Board of Revenue.

ENDORSEMENT—dated 11th August 1892, No. 683 I., Public Works.

Forwarded accordingly.

(By Order.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 11th.

Recd. *Encl.*

G.O., 11th Aug. 1892, Nos. 682, 683 I.

AUGUST.

Indirect Revenue

Forwarding to the Government of India copy of Proceedings embodying a note by the Chief Engineer for Irrigation on the memorandum of — to be credited to each irrigation system classed under "Major Works."

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following papers :—

G.O., dated 29th August 1889, No. 1092 M., Mis.
" " 30th April 1890, " 674 M., Mis.
" " 21st October " " 1575 M.
" " 14th November " " 813, Financial.
" " 1st December " " 700 I.

G.O., dated 29th January 1892, Mis. No. 194 M., Local and Municipal.

Read—the following paper :—

From the Collector of Kistna, dated 29th December 1891, No. 9205.

I have the honour to request the sanction of Government to the following proposals for completing the arrangements for extended canal navigation and business facilities in the town of Bezváda. The plan and estimates have been prepared by the Superintending Engineer, and advantage was taken of the recent visit of the Chief Engineer for Irrigation, Mr. Walch, to write his inspection of the localities and a discussion of the whole matter, and I believe I am correct in saying that all the proposals meet with his entire approval.

2. In G.O., No. 700 I., Public Works, dated 1st December 1890, the rebuilding of the regulating sluices of Ryves' canal at a spot three-quarters of a mile from the canal head was sanctioned among other things and this work has been completed, thus throwing open a new stretch of canal to boat traffic.

3. It is found, however, that the present bridge at the head of Ryves' canal is too low to allow full-sized boats to pass under and it is therefore necessary to increase the headway. Moreover, the bridge does not allow of tow-paths for boats passing below, and this with the strong current there running is a serious drawback to navigation. The raising of the bridge will allow both the foregoing defects to be rectified and will improve the roadway for wheeled traffic by allowing an increase of width and by reducing the declivity of the approach at either end. The estimated cost of this alteration is Rs. 8,500, which it is proposed to meet out of the Canal and Ferry fund about to be transferred to the District Board.

4. The East Coast Railway runs from the Kistna bridge across the main canal into Bezváda, a few yards from the bridge at the head of the Ellore canal, and the line of the bridge strikes the lines of the railway at an awkward angle. The roadway of the bridge is too narrow even now for the traffic across it, and the double curve made by this bridge, that over Ryves' canal and the railway crossing, will form a serious impediment to the traffic which will be blocked from time to time by the passing of trains. Moreover, the waterway of the bridge allows of only one tow-path on the western side, while another tow-path on the eastern side is required to allow boats to get round into Ryves' canal. It is therefore desirable to rebuild the bridge

at the head of the Ellore canal and thus rectify the existing defects once for all and provide for the requirements of wheeled traffic as well as of boats. A reference to the plan will show the great improvement that will be effected.

5. The cost of the new bridge over the Ellore canal is estimated at Rs. 13,500. It is proposed, with the sanction of Government, to provide this amount by transfer of the sum of Rs. 13,680 provided in the anicut project for a bridge over the Lazzabanda drain in the Masulipatam taluk. There is at present no need for a bridge over this drain in any way comparable with the requirements at Bezváda, and the District Board has therefore resolved to request the sanction of Government to the transfer and to forego all claim to a bridge being erected by Government out of anicut funds over the Lazzabanda drain. The resolution of the District Board on the subject is enclosed.

6. The projecting spits of land at the head of Ryves' canal must, to allow of free navigation, be rounded off at a cost of Rs. 1,500.

7. One more important work remains to be provided for. This is the cutting down and levelling of the spoil banks on both sides of Ryves' canal and on the east side of the Ellore canal. At present the lands, which should be rendered accessible for business purposes and for residence by the newly made facility for navigation, remain inaccessible owing to the high spoil banks that lie alongside the canals, and the removal of these banks is essential to complete the improvements in view. The work will cost Rs. 23,959 according to the Superintending Engineer's estimates enclosed.

8. The land on which the spoil banks stand is the property of Government. The land over which it is proposed to spread the earth belongs (1) as regards the right bank of the Ellore and the left bank of the Ryves' canal to the Municipality which is selling the bulk of it to the Court of Wards, and (2) as regards the right bank of Ryves' canal to private purchasers who have consented to have their sites raised by the deposit of earth and to raise the basements of their houses to correspond.

9. It is needless for me to repeat the reasons arising from the exceptional position of Bezváda which render necessary the various improvements already laid before and approved by Government. They apply with equal force to the proposals which form the subject of this letter and which have met with the concurrence of the Chief Engineer for Irrigation after personal investigation. I beg leave therefore to request that Government will be pleased to express its approval of the schemes now laid before it and to make provision for the amounts noted in the two preceding paragraphs, viz., Rs. 1,500 for rounding off the head between the canals and Rs. 23,959 for levelling the spoil banks, or Rs. 25,459 in all, out of Provincial funds. These large earthworks will provide for unskilled labour abundant occupation, which is specially needed owing to the unfavorable season.

10. Copies of the Superintending Engineer's letters, with his plans and estimates in original, are enclosed.

Order—dated 29th January 1892, Mis. No. 194 M., Local and Municipal.

The proposed raising of the Ryves' canal bridge, the construction of a new bridge over the Ellore canal and rounding of the angle between the two canals meet with the approval of Government. Before, however, finally sanctioning these projects, the Public Works Department (Irrigation Branch) will be requested to state whether there is any objection to the substitution of the proposed bridge for that over the Lazzabanda drain.

2. The request for a grant, preferred in para. 9 of the Collector's letter, cannot, in the present state of the provincial finances, be considered.

(True Extract.)

(Signed) J. F. PRICE,
Chief Secretary.

G.O., dated 20th February 1892, Mis. No. 350 M., Local and Municipal.

Read—the following paper :—

From the Public Works Department, dated 10th February 1892, No. 682 C.

ABSTRACT.—Retransferring G.O., dated 29th January 1892, No. 194 M., passing orders on the proposal for extending canal navigation in the Bezváda Municipality.

Order—dated 20th February 1892, Mis. No. 350 M., Local and Municipal.

Communicated to the Collector of Kistna, the projects referred to in para. 1 of G.O., dated 29th January 1892, No. 194 M., being sanctioned.

(True Extract.)

(Signed) J. F. PRICE,
Chief Secretary.

From A. T. ARUNDEL, Esq., Collector of Kistna, to the Chief Secretary to Government, dated Masulipatam, 12th May 1892, No. 3886.

With reference to G Os., Mis. Nos. 194 and 350 M., dated 29th January and 20th February 1892, sanctioning certain proposals for the improvement of communication and navigation in Bezváda and deferring the grant of an allotment for removing certain spoil banks of the canals owing to the present state of the Provincial finances, I have the honour to request that Government will consider the propriety of debiting the charge in question to the Kistna anicut project and that it will, at the same time, enforce its orders by requiring definite and effectual measures to be taken for the removal of all future silt from the canals either to the river or to some place where it will not be a nuisance to the town.

2. With regard to the first point, it should, I think, be recognized that the deposit of the spoil banks beside the canals and their gradual increase by the annual clearance of silt from the canals must be regulated by public needs and requirements. For many years past no silt has been deposited on the north bank of the main canal because it is a public wharf and road. The extra charge in this case is debited to the anicut project. The spoil banks have now become an obstruction and a nuisance and I would urge that the cost of levelling them down, estimated to cost about Rs. 24,000, be debited to the project. The work is of vital importance to the development of those plans for the improvement of Bezváda which have received the approval of Government, and its postponement will be a permanent mischief to the town. There has been a saving of many lakhs of rupees in the execution of the Kistna anicut project thus far ; the rejection of the extension of the East bank canal in favour of extended irrigation elsewhere has alone effected a saving of several lakhs, and there is thus no difficulty as to funds and no apprehension that the cost of removing the spoil banks will reduce the amount available for any other proposed or anticipated work.

3. Secondly, I beg that complete arrangements with suitable mechanical contrivances may be made without delay to remove all future deposits of silt in the canals to a suitable distance. The annual cost of this work has already been sanctioned in G.O., No. 700 I., Public Works, dated 1st December 1890, but I regret to say that the work thus approved by Government is not being efficiently performed. Last year the canal silt was deposited on the spoil banks as usual. This year the same arrangement was proposed, and it was only upon my official and personal solicitations that the Superintending Engineer ordered the silt from a portion of Ryves' canal above the new regulator to be removed to the river. For about two-thirds of the reach in Ryves' canal and for the whole of the reach in the Ellore canal the silt is being thrown on the spoil banks as before. I must admit that I have sympathized with Mr. Hannan's reluctance to remove the whole of the silt to the required distance by ordinary cooly labour owing to the great cost of this method, but this is the second year since Government ordered the work to be done, and the adoption of proper

mechanism either by dredges and lifts or by a light line of railway ought no longer to be delayed. I beg leave therefore to request orders that another season be not allowed to pass without the completion of all necessary arrangements to carry out the work which Government has approved.

No. 385.

Transferred to the Public Works Department (Irrigation Branch).

FORT ST. GEORGE,
23rd May 1892.

(Signed) D. COWIE,
Ag. Asst. Secretary.

No. 119 I.

Note by the Chief Engineer for Irrigation.

In the orders of Government quoted and printed above, certain works for improvement of the new portion of the town of Bezváda, known as "Buckinghampetta," were approved and funds provided for execution of some of them.

2. In dealing with the various proposals, I have consistently objected to any of the cost being charged against "Irrigation;" one of the proposals is to level down the spoil banks along the portion of the "Ryves' canal," on either side of which the new petta has been laid out. These banks are composed chiefly of the earth taken out when the canal was dug some 30 years ago, but they have from time to time been added to by silt clearances and this was unobjectionable under the old state of affairs. When the head of the canal was last year widened to suit the new arrangements, 66,925 cubic yards of spoil were thrown on the rear slopes of the banks in accordance with the provisions in the estimate, of which the Collector was, it is believed, well aware.

3. In his letter No. 9205, dated 29th December 1891, printed above with Proceedings of the Madras Government, No. 194 M., dated 29th January 1892, the Collector himself recommends that the cost of levelling down these banks, in order to improve the value of the building sites at the back of them and in order to allow of the free circulation of air in the new petta, shall be met from "Provincial funds," but in the letter now under consideration he asks that the cost may be debited "to the Kistna anicut project;" against such a course I would strongly protest; as already said in one of my "notes"* on the subject, this work and the others connected with it "are undertaken solely in the interests of the town, sanitary and mercantile," and it would be inequitable to weight the Kistna delta system with a charge which in nowise appertains to it.

Estimate Rs. 23,959.

* No. 68 to the Examiner.

4. The Collector bases his request chiefly on the grounds that there will probably be a large saving on the sanctioned estimate for the Kistna delta system; whether there would be a saving or not does not, it appears to me, materially affect the question, but I may say that I do not believe that there will be any such large saving as the Collector imagines; the drainages are costing much more than was anticipated; only quite recently revised estimates for the Peddalanka and Tungabhadra drains and their affluents have been sanctioned † with an excess of Rs. 1,04,335 over the originally estimated cost, and it is not improbable that the provision of apparatus adequate to deal with the ever increasing difficulty of disposal of silt clearances will absorb any savings that may be made by securing the ultimate area to be irrigated in a more economical way than originally proposed.

† See Proceedings of the Madras Government, No. 546 I., dated 18th June 1892, and No. 447 I. of 9th May 1892.

5. With reference to para. 3 of the Collector's letter, it is true that it has not been found possible to carry out the intention of removing to a distance the whole of the silt clearances of this portion of the *Ryves' canal* during the last two years and that a portion has been added to the existing spoil banks; but the quantity so added is comparatively small, only about 5,000 cubic yards; a further quantity of 4,539 cubic yards was temporarily deposited on the canal berms and is now being boated away and thrown into the river.

6 The disposal of the silt clearances from the heads of all the large canals is a difficult matter to deal with; it has been recognized that the simple and inexpensive method of digging them out during the closure of canals and adding them to the banks, which has hitherto obtained, cannot be much longer continued, and it is proposed in the Eastern delta to dredge them into punts and then lift them from the punts by means of "elevators" which will discharge them over the river bank into the river; this will require costly machinery and I am now in correspondence with the Director-General of Stores, India office, on the subject preparatory to making proposals to Government.

7. In the meantime the Superintending Engineer will be instructed to make every possible effort to have the whole of future silt clearances of the head of the Ryves' canal removed to a distance by the appliances now at his disposal, the "extra cost" of the clearances rendered necessary by the new arrangements being "borne by Provincial Funds" (see G.O., No. 813, dated 14th November 1890, Financial).

CHEPÂK,
4th July 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 12th August 1892, No. 685 I., Public Works.

His Excellency the Governor in Council cannot accede to the Collector's request to charge the Kistna delta system under "Imperial," "49. Capital Expenditure," with the cost of levelling down the spoil banks of the head of "Ryves' canal."

2. The portion of the order of 14th November 1890, No. 813, Financial, with regard to the recurring outlay "for the *extra* cost of removing silt from the head of the Ryves' canal," was, however, issued under a misapprehension, and instead of such outlay being borne by "Provincial funds" as laid down in that order, the *whole* cost of the silt clearance will be charged to the Kistna system under "42. Major Works, Working expenses;" this ruling will have retrospective effect, and any sums not charged in accordance with it will be adjusted in the current year's accounts.

3. The deposit of silt clearances on the canal banks within the limits of the town of Bezváda must cease at whatever cost, and the Superintending Engineer will, with as little delay as possible, remove the silt clearances referred to in para. 5 of the note of the Chief Engineer for Irrigation.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
" Revenue Department.
" Local and Municipal Department.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 12th.

Recd. *Encl.*

G.O., 12th Aug. 1892, No. 685 I.

AUGUST.

Ryves' Canal

Stating, with remarks, that the Government cannot accede to the request of the Collector of Kistna to charge the Kistna delta system with the cost of levelling down the spoil banks of the head of — in connection with the proposed improvements in Bezváda.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

From W. B. DEWINTON, Esq., Superintendent of Works, No. I Periyár division, to the Chief Engineer, Public Works Department, dated Periyár, 25th July 1892, No. 90 C.E.

I have the honour to report that a heavy flood occurred in the Periyár river on the early morning of the 24th instant and also in the Mulya-Panjan canal.

2. Both were due to excessive rainfall over their catchment areas and the latter was much aggravated by the bursting of the bund of the Kumili reservoir.

3. The damage done at Periyár is slight so far as can at present be ascertained, the river being still high ; but in the canal it is very serious.

4. The following extract from rain and river registers will show you what the rainfall was and the height to which the river rose in front and rear of the main dam :—

Date.	Rainfall, Periyár.	Maximum height of river above datum.	
		Front.	Rear.
	I. C.		
20th	1 45	25·30	4.40
21st	1 67	27·55	5·80
22nd	1 93	33·50	7·80
23rd	1 21	33·20	7·70
24th	7 26*	42·25	15·00

* Of this amount 6·80 fell between 7 P.M. on 23rd and 7 A.M. on 24th.

5. The river is now at + 36 and falling, but rain continues though in less quantity and I anticipate a further rise.

6. The damage done at Periyár so far as can at present be ascertained is as follows :—

(1) Boom at boat house carried away owing to the two large trees, to which it was attached on either bank, being uprooted by the action of the flood and the pressure of the mass of *debris* and timber.

(2) Land span of bridge to dam over turbine channel carried away, due probably to its pier being struck by trees.

(3) It is feared, from the appearance of the water, that some at least of the turbine weir piers have gone and possibly also the new length of weir built last month.

(4) Two wire ropeway angle wheels, 8′ diameter, which were on the front wall on their way to N. angle and could not be removed in time, were washed over into the dam and one, if not both, broken.

(5) The revetted platform between workshops and river on which the rope-way driving station stands was much scoured by the action of water entering the workshops through the turbine well and rushing out over and under the platform.

(6) Some planks, shoots and platforms have been carried away and also the Sub-Engineer's thatched office shed on left bank, with some of his papers.

The floating plant was securely moored and is unhurt.

7. A rumour came in at about 10 A.M. on 24th that the Kumili reservoir bund had burst and done great damage to the Mulya-Panjan canal, so I started for Kumili at once and found that the rumour was most unfortunately correct

I have not a copy by me of the Thekady rainfall register, so cannot give details of previous day's rainfall; but 4 inches fell on the night of the 23rd. So far as I can judge from the water mark the water in reservoir was only 6″ above the weir, *i.e.*, 2½′ below top of bund, when the latter breached at a point about 75 yards above weir. It appears to have done so at about 5 A.M. on 24th and a body of water, some 15 feet deep, swept the fragments of the bund a distance of 250 yards to the Thekady-Periyár road and then entered the cutting and canal and carried all before it.

8. The following damage has been done:—

(1) A breach 100′ wide and 25′ deep in the reservoir bund.

(2) All the temporary bridges in watershed cutting swept away.

(3) Earth bank on left of No. 1 lock topped by the flood and carried away.

(4) New earth bank on left of lock No. 2 has shared the same fate. This was a new bank constructed last March and was 6′ wide at top and its crest 6′ above F.S.L. The flood went over it 1½′ deep (*i.e.*, 7½′ above F.S.L.) and carried it away.

The right wing of the weir at this lock is cracked.

(5) No. 3 dam is a complete wreck, being overturned from its foundations.

Nos. 1 and 2 dams are, so far as I can see or ascertain at present, unharmed.

The floating plant on the canal has not been all accounted for as yet, but it is believed that none has been lost.

Two bullocks were drowned by this flood, but most miraculously no human lives were lost.

9. That such havoc should have been done by so small a rainfall is due to the following causes:—

(*a*) The attempt to store up the water flowing off a large catchment in a reservoir and a canal supplied with surplussing power which would, if the works were permanent, be considered, and undoubtedly is, utterly inadequate.

(*b*) The fact that the bund of Kumili reservoir is founded for the greater part of its length on a bog and therefore has its foundations always saturated. The site of the breach has given frequent trouble before and was revetted last year with sand bags, but practically the whole bund is as insecure as a bund can be and a breach was imminent at at least one other place.

It will, I think, be a question for serious consideration whether it will not be advisable to abandon this reservoir altogether and drive the drills at north end of tunnel and the wire tramway by steam; but I will report further on this when I have examined breach and bund again to-morrow. The reservoir lascar had his orders to remove the planks in weir tambogies immediately the water rose 3″ above them, and did so remove all but two which had jammed so tight that he could not get them out, but the relief afforded by the removal of these two small planks would have been quite unappreciable.

(*c*) The use of earth banks across the canal instead of damming its whole width with masonry. Here the tambogie shutters were all out, but the body of water was too enormous for any effective relief.

(*d*) The construction of the new No. 3 dam on the foundations of the old one which were built with lime unmixed with surki and have proved to be utterly worthless. The new work commenced last November and completed in April and built with surki mortar is perfectly sound and has fallen over bodily, carrying with it the old unsound foundations which formed the pivot on which the dam was overturned. This dam, in addition to the heavy flood caused by the failure of the Kumili reservoir bund, had to bear the weight of a lot of water entering the reach above it from its own catchment.

10. The damage done at Periyár is comparatively trifling (to the dam itself, I believe, *nil*) and only what might be expected from the heaviest flood on record since

the commencement of the work, but the havoc worked in the canal and with our arrangements for work at north end of tunnel and wire tramway just when everything had arrived at perfect working order is *most* disheartening, and I am very unwilling to expose ourselves to similar disaster in the future. I have at present great doubts whether it is possible to make the Kumili reservoir bund secure for anything like the sum which would suffice to purchase and work a steam plant for north end of tunnel and wire tramway, and unless we can make it secure I am certain that it is better to abandon it as a source of power. With regard to the canal, if we are to continue to dam up water in it, I beg that its whole width at each dam may be spanned by masonry, so that it may remain unharmed even in the event of a breach in the Kumili reservoir.

11. The Thekady-Periyár road was submerged in places and was a raging torrent near Thekady, but with the exception of a few plank bridges damaged and some small steps it is unharmed.

12. I will report further the day after to-morrow.

From W. B. DEWINTON, Esq., Superintendent of Works, No. I Periyár division, to the Chief Engineer, Public Works Department, dated Periyár, 27th July 1892, No. 92 C.E.

In continuation of my No. 90 C.E., dated 25th July 1892, I have the honour to make the following further report on the effects of the flood of 24th instant at Periyár and of the breach in the Kumili reservoir bund.

2. The river is now at + 32·15 on front gauge and the damage done at Periyár can be more accurately ascertained. It is as follows :—

(1) Only one of the trees to which the boom was attached, viz., that on left bank, was uprooted and carried away; the greater part of the boom with the wire rope on which it was strung is now lying down the right bank.

(2) Land span of bridge to dam carried away owing to its pier being either struck by a tree or undermined.

(3) All the turbine weir piers carried away, but the new length of weir built in Portland cement last month is apparently intact.

(4) Of the two cast iron ropeway angle wheels which fell over the front wall, one is completely broken, the other only slightly so and repairable. They were tied with a stout rope and should have been safe.

(5) Revetted platform between workshop and river scoured as stated in my last report.

(6) Some planks, shoots and platforms and Sub-Engineer's office shed carried away.

(7) A few cubic feet, less than ten, of the rubble thickening in rear of front wall, which was only completed a short time before the flood, has been scoured out, and some buttresses of rubble to dividing wall on right which we were building when the flood occurred were partially destroyed. With these two trivial exceptions, the dam has received no damage.

3. I proceeded to Kumili yesterday morning and returned *viâ* the canal. The following is a full account of damages done : —

(1) Reservoir bund breached about 75 yards above sluice for a length of 100 feet and a depth of 25 feet. The bund burst suddenly with a loud report at about 5-30 A.M. on 24th and was undoubtedly undermined and blown up from below, as the water in reservoir was never nearer than $2\frac{1}{2}'$ to the top of the bund.

(2) A thatched house in the path of the torrent was swept away, but fortunately no lives were lost.

(3) Two bullocks were drowned.

(4) All the bridges over the water-shed cutting were washed away and the centrifugal pump on one of them is missing.

(5) Earth bank on left of lock No. 1 carried away by the rush of water in the canal ($7\frac{1}{2}'$ above F.S.L.) to a depth of about 10 feet. Scour slight as soil is good; lock unhurt.

(6) Earth bank on left of lock No. 2 carried away to a depth of 15 feet and a width of 50 feet. Earth bank on right slightly scoured in rear, otherwise unhurt. The greater immunity of this bank was due to its being older and covered with vegetation. Unloading arrangements slightly damaged but easily repairable.

Old crack in right wing of weir slightly enlarged and a hole 6 feet deep scoured out in rear of weir. Towpath in Nos. 1 and 2 reaches much cut up.

(7) Dam No. 1 is unhurt, but the earthen bank on right was carried away for a length of 40 feet. The scour, however, is no deeper than top of dam tambogies, the soil being good. Unloading arrangements carried away, but are recoverable.

(8) Dam No. 2 is unhurt, being founded on rock. A slight scour round left flank has done no harm. Unloading arrangements carried away, but most of the shoots, &c., are recoverable. Towpath in No. 4 reach a good deal knocked about, but bridges are all intact.

(9) Dam No. 3 overturned from its foundations, which were built with mortar without admixture of surki and proved, in consequence, altogether untrustworthy.

(10) Floating plant in canal all accounted for with the exception of one barge not yet found because it is as yet impossible to get the whole way along the canal.

(11) A good many bridges damaged on Periyár-Thekady road, but not to a serious extent.

4. I propose to remedy the damage done in the following manner:—

(*a*) *At Periyár.*—(1) To throw a queen-post truss across the turbine channel in the line of the present bridge, it being undesirable to curtail the water-way by a pier. This truss can be transferred to a new bridge which I propose to build higher up with all its piers within the area of the dam, when it is ready to receive it.

If the span exceeds 30 feet, a Home truss will probably be best.

(2) To replace the piers of turbine weir with a weir similar to the one built in June, with crest at + 24, and posts rising from it to + 27, against which planks can be laid when it is desired to raise water.

Yes. The piers were a mistake.

(3) To build a masonry retaining wall to platform between workshops and river to protect it in all future floods.

Doubtful. The dry stone revetment seems to have done its work very well.

(*b*) *On Canal.*—(1) To close the breaches at locks Nos. I and II by a timber* coffer dam filled with good earth and revetted on top, with top at F.S.L., which I believe to be the quickest and cheapest method likely to be permanent, and which will at the same time give largely increased surplussing power.

* For this please substitute an American timber crib dam filled with rubble.

I am afraid there will be a difficulty in making this water-tight, and in dry weather we have no water to spare.

(2) To rebuild dam No. 3 of masonry or timber, whichever proves the cheapest, on a site about 200 feet lower down the stream, where I believe I can obtain a good foundation on rock and more water-way, the catchment of this reach being very extensive.

Masonry, if at all; but I am rather doubtful whether it is worth while rebuilding this dam. We shall only want it for about a year and a half.

(*c*) *At Kumili.*—Immediately in front of the breach and in the bed of the reservoir there is a large rock, measuring some 2,500 square feet, and the reservoir bund above the breach has a toe of very fair clay, the only stable bit of the whole bund. I propose to raise a bund between the rock and the clay, to a height that will keep the water in the reservoir well below road level and to build a sluice on the rock, and pass water through it to turbine channel. I am now having a channel blasted through the rock, to enable us to turn the water away from the breach and down the turbine channel, which I hope will be done in a fortnight time. This arrangement will throw the weakest part of the reservoir bund, including the breach, outside the reservoir altogether, and greatly reduce the risk of a similar accident occurring again. I am

having a survey made now which will show you the proposed arrangement. It will of course make us much more dependent on rainfall for the supply of the north end and wire tramway turbine, as we shall never again be able to store so much water in the reservoir but I fear this is unavoidable, because the bund has slipped throughout its length, except at the clay above mentioned, and the only way to make it secure would be to carry the bund down to the rock underlying the bog which might be found an impossible task and would in any case cost a very large sum. A reduced supply of water at the north end of the tunnel, though it will upset our calculations as to date of the tunnel's completion, (*a*) will not seriously affect the progress of the project, because the tunnel can in any case be completed before it is required, but the wire tramway will be of very little use to us if we cannot work it regularly, and I believe it will pay us to work it by steam (*b*). I will report on this shortly.

I do not think Mr. deWinton knows how little water the reservoir really held. It was only about a month's supply at most.

(*a*) It will at the most make a difference of one month's working in each reservoir, *i.e.*, it *may* add a couple of months to the time of completing the tunnel.

(*b*) Quite out of the question.

5. The north end turbine will, I hope, be working again in a fortnight's time, and the canal should be in working order down to No. 2 dam before end of August.

6. I respectfully submit that the following are some of the lessons to be learnt from this catastrophe at Kumili and flood in the Periyár:—

(1) that it is cheaper in the long run to make temporary structures and arrangements as sound and serviceable as those intended to be permanent;

(1) Not quite, though perhaps recently so. But it is scarcely economical even in permanent structures to furnish for wholly abnormal floods such as this one was, as regards the Malya-Periyár though not in the Periyár.

(2) that to use this line without admixture of surki in damp situations is to covet disaster;

(2) Yes. If dam No. 3 was built without surki in the lowest part, it was a mistake.

(3) that it is inadvisable to curtail our surplussing power at site of dam, and the left bank escape should certainly be built;

(3) *This* flood, so far as the Periyár is concerned proves nothing one way or the other; it would not have risen five feet on the right bank escape alone.

(4) that it is *infinitely preferable* to pass the flood water quietly over the dam itself than to bring it round the flanks in a raging, furious torrent.

(4) Certainly *not*. It would have done twice as much damage to the dam as it actually did to the subsidiary works. A flood cannot pass *quietly* with a fall which before the works are completed will reach 140 feet.

(5) I much wish that you had been here to see this flood for I am sure it would have convinced you of the truth of the above.

(5) So far as the Periyár is concerned the flood was a very moderate one, the discharge being just *one-fifth* of what we have calculated on as a *maximum* flood.

Note by the Chief Engineer, Public Works Department.

Submitted for the information of Government.

2. I have for some time been expecting to hear of a heavy flood in the Periyár, the rain having been heavy and continuous for the last three weeks.

3. At the main dam the damage done appears to have been slight; to the dam itself, as far as can at present be ascertained, no harm has been done, though when the water goes down it will probably be found that a certain amount of scour has taken place.

4. If the turbine weir has been damaged, as seems probable, it will cause an annoying delay in getting the machinery to work.

5. Even if the Kumili reservoir has breached, it will not affect the work at the tunnel, as the ordinary daily supply of the river is ample for working the compressors at all events up to the end of August, and by that time the damage can be repaired.

6. I have, however, considerable doubt as to whether the reservoir has breached at all, for I do not know what Mr. deWinton means by the reservoir bund. The reservoir, which is a very small one, is formed by a small masonry dam across the Mulya-Panjan river. and has no earthen bank at all; the Kumili-Peermade road which runs along the right bank of the river forms a bank a few feet high for some distance, and it is possible that this has breached, but it seems impossible that any serious damage could be done by any body of water which could escape through a bank here, nor how a breach 25 feet deep could possibly occur at this point. Moreover, if such a breach did occur, it must infallibly involve the destruction of a large portion of the Thekady-Periyár road, which the water would have to cross on its way back to the river valley and this does not seem to have occurred.

7. What, from the description given, probably has breached is the Kumili-Peermade road below the reservoir dam, the "weir" referred to in para. 7 being the regulating weir for the tunnel supply channel; there is one point in this road (which was not constructed by us, and has nothing to do with the Periyár works) which has given endless trouble owing to the nature of the ground which it crosses, we have spent a very large sum in repairing slips and making up the road, in the interests of our own traffic, and I am inclined to think it is this which has breached.

8. The quantity of water stored in this reservoir is insignificant at the most, and what occurred was in all probability simply a heavy flood in the Mulya-Panjan; the rainfall registers at Thekady are no guide at all to the rainfall in the upper part of the Mulya-Panjan valley.

9. Further information is, however, required on this point, and will be obtained.

10. The breaching of the small earthen bunds at Nos. I and II locks is of no great consequence, but the renewed damage to No. III dam is more serious, and will probably delay the introduction of water transport for the materials required on the main dam.

11. Further explanation is required as regards this, the information given by the Superintendent of Works not being quite intelligible. The description of the way in which the dam fell appears to indicate that it was not the foundation which gave way, but that the new work lately completed separated from the old.

12. The statement in para. 10 of Mr. deWinton's report that the flood was the highest which has occurred since the commencement of the work is not quite correct. It was not quite so high as that of the 31st October 1891 which rose 15·45 on the lower gauge, that of the 24th July having only reached 15·00. The level on the lower gauge is the only true measure of the discharge, that on the upper being affected by the height of the dam, which has been considerably raised since October.

OOTACAMUND,
1st August 1892.

(Signed) J. PENNYCUICK, Colonel, R.E.,
Chief Engineer, P.W.D.

Since the above note was written, the further report now submitted has been received; it adds little to the information contained in the former report, except that it seems probable (though it is not quite clear even now) that it was the Kumili-Peermade road above the reservoir dam which breached; I confess, however, that I do not see how a scour of 25 feet deep would take place here.

There is no doubt that the flood in the Mulya-Panjan was of an altogether abnormal character, as even if the Kumili reservoir emptied itself into the river in four hours, it would not add ten per cent. to the natural discharge of the latter.

Mr. deWinton's proposals for the future will require further consideration; I have, however, added a few rough notes in the margin of his report.

OOTACAMUND,
1st August 1892.

(Signed) J. PENNYCUICK, Colonel, R.E.,
Chief Engineer, P.W.D.

ORDER—dated 12th August 1892, No. 686 I., Public Works.

Recorded.

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent of Works, Periyár Project.
" Chief Engineer for Irrigation.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 12th.

Recd. *Encl.*

G.O., 12th Aug. 1892, No. 686 I.

AUGUST.

Flood in the Periyar River

Reports on the — together with a note by the Chief Engineer, Public Works Department, recorded.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From Lieut.-Colonel A. C. SMITH, R.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Trichinopoly, 30th July 1892, No. 392 T.N.

I have the honour to request that the following modification of allotments in the Tinnevelly division may be sanctioned at an early date.

Item No.	—	Existing grant.	Modification of allotment applied for.		Modification of allotment proposed.	
			Reduction.	Increase.	Reduction.	Increase.
	PROVINCIAL IRRIGATION.	RS.	RS.	RS.	RS.	RS.
	43. Minor Works and Navigation.					
	Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.					
	Original Works.					
	Major.					
1	Melapatam Karisalkulam. Improving the —, estimate Rs. 3,840, sanctioned in G.O., No. 891 I., dated 20th November 1891 ..	532	..	960	..	960
2	Tiruvengadam kasba, Periyakulam tank. Improvements to —, estimate Rs. 4,400, sanctioned in G.O., No. 567 I. of 17th July 1891	4,300	960	..	960	..
	Total ..	..	960	960	960	960

2. *Item* 1.—The outlay up to end of March last, including adjustments in the supplemental accounts, was Rs. 2,348 and not Rs. 3,308 as erroneously shown in the statement of incomplete works submitted in this office No. 218 T.C., dated 12th May 1892. Rs. 532 have been allotted in G.O., No. 537 I., dated 15th June 1892, and the balance of the estimate is now required to complete the work which may be transferred from item No. 2.

Order—dated 13th August 1892, No. 690 I., Public Works.

The modification of allotments proposed is sanctioned.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, VI Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 13th.

Recd. *Encl.*

G.O., 13th Aug. 1892, No. 690 I.

AUGUST.

Funds

Certain modification proposed regarding allotments in the Tinnevelly division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From W. B. deWINTON, Esq., Superintendent of Works, No. I Periyár division, to the Chief Engineer, Public Works Department, dated Periyár, 5th August 1892, No. 99 C.E.

I have the honour to request that you will be good enough to obtain the sanction of Government to an increase of the limit of reserve stock in this division from Rs. 20,000, sanctioned in G.O., No. 114 I., Public Works, dated 4th March 1889, to Rs. 60,000, as per statement annexed.

2. The chief reason for this large increase is that the operations of the division are very much more extensive now than they were in 1889, and it has been found impossible in practice, at such a distance from sources of supply, to keep the value of the reserve stock, it is absolutely necessary to maintain, any where near the limit then sanctioned.

3. The limit now proposed should obviate all further necessity for raising and every endeavour will, of course, be made not only to keep the value of stock within it but as far below it as practicable.

Enclosure.

Sub-head.	Sanctioned limit.	Proposed limit.	Reasons for increase.
	RS.	RS.	
Small stores	400	3,000	An enormous number of nails and screws of sorts are used on this project in making stagings, platforms, ladders, boxes, shoots, boats, &c., and it is necessary to keep a very large supply.
Building materials ..	2,500	..	All charged off to works on receipt.
Timber	5,000	10,000	A great quantity of timber is required and the greater the reserve kept the more seasoned and serviceable is the wood. The sanctioned limit has been for a long time unavoidably exceeded.
Metals	3,000	5,000	It takes so long to obtain various sizes of iron, steel, &c., from Madras that a large quantity has to be kept in stock and the limit sanctioned has proved inadequate.
Fuel	1,000	..	All charged off to works on receipt.
Painters' stores	100	1,000	Much paint and oil, red lead and white lead is required for machinery and wood work; limit much too low.
House fittings	1,000	1,000	....
Explosives	..	25,000	To prevent damage in transit in wet weather and to avoid delay on the works it is found necessary to keep at least 2 months' supply of explosives in stock and the limit now provided is intended to cover this.
Miscellaneous	7,000	15,000	Items under this head consist chiefly of lamp oil, kerosine oil, cocoanut oil, rope, tallow, tar, hides, belting, gunny bags, baskets, buckets, &c., of which a large quantity has to be maintained; sanctioned limit much too low.
Total ..	20,000	60,000	

ORDER—dated 17th August 1892, No. 693 I., Public Works.

The limit of reserve stock in the No. I Periyár division will be increased from Rs. 20,000 to Rs. 60,000 as shown below :—

	RS.
Small stores	3,000
Timber	10,000
Metals	5,000
Painters' stores	1,000
House fittings	1,000
Explosives	25,000
Miscellaneous	15,000
Total ...	60,000

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Superintendent of Works, No. I Periyár division.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 17th.

Recd. *Encl.*

G.O., 17th Aug. 1892, No. 693 I.

AUGUST.

Reserve Stock

Increasing the limit of — in the No. I Periyár division from Rs. 20,000 to Rupees 60,000.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From W. B. deWinton, Esq., Superintendent of Works, No. I Periyár division, to the Chief Engineer, Public Works Department, dated Periyár, 2nd August 1892, No. 96 C.E.

I have the honour to state that the amount of the estimate (Rs. 5,000) for repairs and maintenance of tools and plant during 1892–93, sanctioned in G.O., No. 608 I., dated 15th July 1892, cannot be met from the balance of Rs. 3,789 now at my disposal, and to request that a further sum of Rs. 15,000 may be placed at my disposal to cover the above and future sanctions.

Order—dated 20th August 1892, No. 697 I., Public Works.

The amount at the disposal of Government for unforeseen charges under tools and plant having been exhausted, in order to meet the above and future demands the Government of India will be requested to sanction the transfer to tools and plant of Rs. 50,000 from the balance of Rs. 1,75,185 available for unforeseen works of the project and Rs. 11,500 from the provision for establishment charges. The total amount sanctioned for the project will then be redistributed as shown below :—

	RS.	RS.
Works	40,08,682	39,58,682
Establishment	8,91,718	8,80,218
Tools and plant	5,24,600	5,86,100
Total ...	54,25,000	54,25,000

2. Ordered that a copy of these Proceedings be forwarded to the Government of India with the request that the transfer proposed in para. 1 above may be sanctioned.

(Here enter No. 698 I., Public Works, dated 20th August 1892.)

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Superintendent of Works, No. I Periyár division.
" Examiner, Public Works Accounts.
" Revenue Department.

ENDORSEMENT—dated 20th August 1892, No. 698 I., Public Works.

Forwarded.

(By Order.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 20th.

Recd. *Encl.*

G.O., 20th Aug. 1892, Nos. 697, 698 I.

AUGUST.

Funds

Forwarding, for sanction, copy of Proceedings suggesting certain transfers of — to cover sanctions under tools and plant, Periyár project.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 9th June 1892, No. 300 G.N.

I have the honour to submit, herewith, for your approval and sanction of Government, a plan and estimate for constructing a bridge, No. 5, at 16 miles, Mahánadi canal, Rushikulya project, amounting to Rs. 3,470.

2. There is no provision made for this bridge in the revised estimate dealt with in G.O., No. 482 I., dated 4th September 1890, but this estimate is prepared and submitted with reference to your decision that a bridge is necessary at this place (*vide* your inspection notes printed with G.O., No. 218 I., dated 7th March 1891, page 4).

ENCLOSURE.

REPORT accompanying the estimate for constructing a bridge, No. 5, at 16 miles, Mahánadi canal, Rushikulya division.

	RS.
Amount of estimate	3,470

There is no provision for this bridge in the revised estimate sanctioned in G.O., No. 482 I., dated 4th September 1890. The Chief Engineer for Irrigation decided that a bridge is certainly necessary at this place (*vide* his inspection notes printed under G.O., No. 218 I., dated 7th March 1891, page 4).

2. When landing the plate girder bridges which were sent from England for the Rushikulya canal, one of the girders belonging to a bridge of 2 spans, 30′ each, was dropped into the sea at Gopálpur. The local boatmen were unable to recover it and a diver, who was sent down from Calcutta for the purpose, also failed.

3. The site on Rushikulya canal proposed for this bridge was 25 miles, but there is no through traffic at this place and the canal makes a long bend, at each end of which bridges are provided. A bridge at the proposed site is therefore unnecessary. There is no place on the Rushikulya canal where the remaining span of 30′ might be utilized, but it will do well for the bridge now proposed on Mahánadi canal.

4. It is proposed to charge half the original cost of the iron bridge to Mahánadi canal and half to Rushikulya. One girder remains which it is difficult to utilize. Besides the girder a bundle of floor plates was dropped into the Hooghly, but sufficient remain for a 30′span bridge.

DEVALAPALLI,
26th May 1892.

(Signed) W. C. DEMORGAN,
Executive Engineer.

To the Superintending Engineer, I Circle, dated 23rd June 1892, No I/55 G.N.

From W. C. DEMORGAN, Esq., Executive Engineer, Rushikulya division, to the Superintending Engineer, I Circle, dated Dogam, 15th July 1892, No. 727.

With reference to your No. 391 G.N., dated 3rd June 1892, I have the honour to inform you that Rs. 3,914 was paid for the ironwork of bridge, No. 9, Rushikulya canal (2 spans of 30′), received from England.

2. As already reported, one girder of this bridge was dropped into the sea when being landed at Gopálpur. The bridge is, therefore, useless on the Rushikulya canal. One span of 30′ is suitable for bridge, No. 5, Mahánadi canal, and therefore half of

the cost or Rs. 1,957 have been debited to Mahánadi canal bridges and a corresponding credit to Rushikulya canal bridges. To Rs. 1,957, Rs. 18 have been added for cost of carriage from Dogam to the Mahánadi canal, totalling Rs. 1,975 as allowed in the estimate.

No. 500 G.N.

Copy submitted to the Chief Engineer for Irrigation with reference to his memorandum No. I/55 G.N., dated 23rd ultimo.

(Signed) G. D. WYBROW,
Superintending Engineer, I Circle.

22nd July 1892.

No. 134 I.

Note by the Chief Engineer for Irrigation.

The estimate is recommended for sanction.

2. Of the total cost, Rs. 1,957 is merely a transfer to the proposed work from charges already made to "G. Bridges," Rushikulya Canal.

OOTACAMUND,
9th August 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 20th August 1892, No. 699 I., Public Works.

The following estimate, amounting to Rs. 3,470, for constructing a bridge, No. 5, at 16 miles, Mahánadi canal, Rushikulya project, is sanctioned from the balance of the lump sum provision for unforeseen works made in the revised estimate for the project printed in Proceedings of the Madras Government No. 482 I., dated 4th September 1890, which will then be reduced to Rs. 62,049 :—

Famine Relief and Insurance.
35. Protective Works, Irrigation.
Rushikulya Project.
I. Works.
(2) Main Canals and Branches.
Mahánadi Canal.
G. Bridges.

	RS.
Constructing bridge, No. 5, at 16 miles, estimate	3,470

2. This sanction is registered as No. 88 I. of 1892-93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle, with four enclosures.
,, Chief Engineer for Irrigation.
,, Examiner, Public Works Accounts.
,, Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 20th.

Recd. *Encl.*

G.O., 20th Aug. 1892, No. 699 I.

AUGUST.

Rushikulya Project

Bridge.—Estimate of Rs. 3,470 for constructing a —, No. 5, at 16 miles, Mahánadi canal, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 1st August 1892, No. 531 G.N.

I have the honour to submit the accompanying estimate, amounting to Rs. 25, for a catch drain from 15 $\frac{9}{16}$ miles, Rushikulya canal, outside the right bank, to under-tunnel No. 10-A, and to recommend that it may be sanctioned.

2. This small drain is necessary to carry the water, which formerly passed through a gap in the canal bank, down to the site of No. 10-A under-tunnel.

ORDER—dated 22nd August 1892, No. 704 I., Public Works.

The following estimate is sanctioned from the lump sum provision of Rs. 6,000 made for "catch drain, Rushikulya canal," in the revised estimate for the Rushikulya project, printed in Proceedings of the Madras Government No. 482 I., dated 4th September 1890 :—

Famine Relief and Insurance.
35. Protective Irrigation Works.
Rushikulya Project.
I. Works.
Rushikulya Canal.
(4) Drainage and Protective Works.
L. Earthwork.

	RS.
Catch drain from 15$\frac{9}{16}$ miles, outside the right bank, to under-tunnel No. 10-A, estimate	25

2. This sanction is registered as No. 89 I. of 1892–93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle, with two enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 22nd.

Recd. *Encl.*

G.O., 22nd Aug. 1892, No. 704 I.

AUGUST.

Rushikulya Project

Catch drain.—Estimate of Rs. 25 for a — from $15\frac{9}{10}$ miles, Rushikulya canal, outsi de the right bank, to under-tunnel No. 10-A saictoned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 31st July 1892, No. 350 V.Z.

I have the honour to bring to your notice that the Executive Engineer in charge Vizagapatam division applies for the following transfers of funds and to recommend that they may be sanctioned:—

Provincial.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.

From	RS.	*To*	RS.
Koppaka anicut extension, budget item No. 67	1,500	Constructing Pedda Kattu tank, estimate Rs. 3,350, sanctioned in G.O., No. 449 I., dated 11th May 1892 ...	1,500
Tank restoration scheme, repairs ...	2,000	Tank restoration, new works	2,000
Total ...	3,500	Total ...	3,500

ORDER—dated 22nd August 1892, No. 706 I., Public Works.

The modifications of allotments applied for are sanctioned.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 22nd.

Recd. *Encl.*

G.O., 22nd Aug. 1892, No. 706 I.

AUGUST.

Funds

Certain modifications of allotments for the Vizagapatam division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From Lieut.-Colonel A. C. SMITH, R.E., Superintending Engineer, VI Circle, to the Chief Engineer, Public Works Department, dated Trichinopoly, 8th August 1892, No. 197 P.R.

I have the honour to forward, for the sanction of Government, the following extract from the completion statement of No. II Periyár division for the month of March 1892, duly verified by the Examiner of Public Works Accounts and returned for record in this office with his letter No. 500 C., dated 29th July 1892:—

Item No.	Name of work.	Amount of estimate.	Authority sanctioning the estimate.	Outlay.	Excess over the estimate.
		RS.		RS.	RS.
1	Aqueduct at 2 miles 7 furlongs and 234 feet, 1st reach.	4,928	G.O., No. 688 I., dated 4th September 1891.	5,441	513
2	Aqueduct at 3 miles 3 furlongs and 500 feet, 1st reach.	4,140	Superintending Engineer's Register No. 29 of 1889–90.	4,858	718
3	No. 3 accommodation bridge, 3rd reach ..	3,500	G.O., No. 51 I., dated 23rd January 1888.	3,957	457
4	Weir for the Kuravankolam tank, 4th reach ..	520	Superintending Engineer's Register No. 32 of 1890–91.	592	72
5	Maintenance for rest-house at Mettupatty, 5th reach.	80	Superintending Engineer's No. 3 of 1891–92.	86	6
6	Head sluice to subsidiary branch channel, 3rd branch channel.	1,150	Superintending Engineer's No. 50 of 1888–89.	2,260	1,110
7	No. IV drop fall, 3rd branch channel ..	730	G.O., No. 51 I., dated 23rd January 1888.	980	250
8	No. V do. do. do. ..	760	Do. do. ..	826	66
9	No. VIII do. do. do. ..	770	Do. do. ..	827	57
10	No. VII drop fall, 4th branch channel ..	840	Superintending Engineer's Register No. 61 of 1891–92.	988	148
11	Maintenance to 4th branch channel	300	Superintending Engineer's Register No. 46 of 1891–92.	320	20
		..	..	Total ..	3,417

2. The amount of the estimate for item 1 was Rs. 4,140, which was reported completed at an outlay of Rs. 4,928 or Rs. 788 in excess of the estimate. This excess was sanctioned in G.O., No. 688 I., dated 4th September 1891, but, from the completion statement now received, it would appear that further outlay was incurred on the work.

3. The form of completion statement approved in G.O., No. 3053 W., dated 14th November 1891, and which is adopted in the present case, does not provide for any explanation as to cause of excess or saving; but the excess in each case, referred to above, being over 5 per cent. of the sanctioned estimate, I consider that, under para. 3 of G.O., No. 733 I., dated 21st September 1891, and your memo. No. 5632 C., dated 14th December 1891, it requires the sanction of Government.

Order—dated 22nd August 1892, No. 707 I., Public Works.

The Examiner of Public Works Accounts is authorized to pass the expenditure incurred on the items referred to, the excess expenditure of Rs. 3,417 being met from the balance available for unforeseen works of the Periyár project, which will then be reduced to Rs. 1,21,768.

2. This sanction has been registered as No. 90 I. of 1892-93.

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, VI Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 22nd.

Recd. *Encl.*

G.O., 22nd Aug. 1892, No. 707 I.

AUGUST.

Periyar Project

The Examiner, Public Works Accounts, authorized to pass the excess expenditure on certain completed works in No. II Periyár division.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From W. B. deWINTON, Esq., Superintendent of Works, No. I Periyár division, to the Chief Engineer, Public Works Department, dated Periyár, 9th August 1892, No. 105 C.E.

I have the honour to request that you will be good enough to place at my disposal a sum of Rs. 15,000 to cover sanctions which may be accorded by me for works, as the amount of Rs. 15,000 placed at my disposal in G.O., No. 270 I., dated 17th March 1892, has been utilized.

Order—dated 22nd August 1892, No. 708 I., Public Works.

Rupees 15,000 are placed at the disposal of the Superintendent of Works, No. I Periyár division, from the balance of the amount reserved for unforeseen works of the Periyár project, which will then be reduced to Rs. 1,06,768.

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
,, Superintendent of Works, No. I Periyár division.
,, Examiner, Public Works Accounts.
,, Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 22nd.

Recd. *Encl.*

G.O., 22nd Aug. 1892, No. 708 I.

AUGUST.

Funds

Placing at the disposal of the Superintendent of Works, No. I Periyár division, Rs. 15,000 to cover sanctions that may be accorded by him for works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From J. W. MARTIN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 6th August 1892, No. 1163 K.S.

With reference to the concluding part of para. 3 (*c*) of your memo. No. II/37 K.S., dated 27th February 1892, I have the honour to forward, herewith, for your approval and obtaining the sanction of Government, two estimates, one for a single and the other for double lascars' shed at Pamarru in the Gudiváda division, for Rs. 290 and 520, respectively.

2. The report accompanying the estimates explains the necessity for the works.

ENCLOSURE.

REPORT to accompany the estimates for re-constructing two sheds with tiled roofing for the occupation of three lock lascars at Pamarru.

The total amount of the above two estimates (1 single lascar's shed for Rs. 290 and second for a double lascars' shed for Rs. 520) is Rs. 810.

2. Originally in 1885 a shed for three lascars with thatched roofing was built there at a cost of Rs. 200. The accommodation provided is found insufficient for the lascars and the cost of re-thatching it every year, owing to the action of white ants, the walls being entirely of mud, is an unnecessarily heavy item in the lock repairs.

3. It is, therefore, proposed to re-build the sheds with tiled roofing and with sufficient accommodation. The present design is in accordance with that of the other sheds in this division for lock lascars.

(Signed) A. CHATTERTON,
Executive Engineer, Gudiváda division.

ORDER—dated 23rd August 1892, No. 709 I., Public Works.

The following estimates, amounting together to Rs. 810, for constructing sheds for lascars at Pamarru lock in the Gudiváda division of the Kistna Eastern delta, are

sanctioned from the balance of the lump sum provision available for unforeseen works, which will then be reduced to Rs. 83,860:—

Capital Expenditure on Public Works (not charged against Revenue).
49. Irrigation.
Kistna Delta System.
Eastern Section.
Gudiváda Division.
I. Works.
Pamarru Junction Canal
(2) Main Canals and Branches.
K. Buildings.

		RS.
1. Constructing a double lascars' shed at Pamarru lock, estimate	...	520
2. " single " " " "	...	290
Total	...	810

2. This sanction is registered as No. 91 I. of 1892-93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with two enclosures.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 23rd.

Recd. *Encl.*

G.O., 23rd Aug. 1892, No. 709 I.

AUGUST.

Sheds

Estimates, amounting together to Rs. 810, for constructing — for lascars at Pamarru lock in the Gudiváda division of the Kistna Eastern delta, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers:—

From the Superintending Engineer, IV Circle, dated 26th May 1892, No. 116 E.I.
To " IV " " 2nd June " " IV/29 S.L.
From " IV " " 4th Aug. " " 168 E.I.

No. 135 I.

Submitted to Government with a recommendation that the works shown in the subjoined statement may be added to the list of "Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works Department":—

Taluk.	Number on the map.	Source of supply.	Name of group or system.	Name of channel.	Length of channel.	Name of tank.	Area and revenue. Area.	Area and revenue. Revenue.	Total of each group or system. Area.	Total of each group or system. Revenue.
1	2	3	4	5	6	7	8	9	10	11
					M. F.		ACS.	RS.	ACS.	RS.
Atúr.	83-A.	Singapuram river, a tributary of Vellár or Vasishtánadi.	Singapuram anicut.	Chinnakrishnapuram supply channel.	1 3	..	96	636	..	..
	83-B.	..	..	..	..	Chinnakrishnapuram tank.	159	792	..	..

OOTACAMUND,
13th August 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 23rd August 1892, No. 710 I., Public Works.

The proposal of the Chief Engineer for Irrigation is approved.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, IV Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 23rd.

Recd. *Encl.*

G.O., 23rd Aug. 1892, No. 710 I.

AUGUST.

Minor Irrigation Works

The proposal of the Chief Engineer for Irrigation to add to the list of — under the charge of the Public Works Department certain works in the Salem district approved.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Establishment.

READ—the following papers :—

Proceedings of the Madras Government, Public Department, dated 29th June 1892, No. 449.

ABSTRACT.—Communicating address presented by the inhabitants of Palmanér town to His Excellency the Lord Wenlock, G.C.I.E., on his sixth tour and His Excellency's reply.

Extract from "note" by the Chief Engineer for Irrigation, dated 10th August 1892.

The schemes in Palmanér taluk referred to. These have from time to time been inquired into and the result of the last investigation, after the famine of 1877, will be found detailed in Proceedings of the Madras Government, Nos. 1241, dated 30th May 1878, and 1886, dated 3rd September 1878. As His Excellency the Governor wishes these schemes re-investigated, the Superintending Engineer, IV Circle, will be so instructed and directed to apply for such establishment as he may require for the purpose.

ORDER—dated 23rd August 1892, No. 711 I., Public Works.

The presenters of the address will be informed that the irrigation schemes referred to by them shall be re-investigated.

2. The Superintending Engineer, IV Circle, will apply to the Chief Engineer for such establishment as may be necessary for a complete investigation of the schemes referred to.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer, Public Works Department.
" " for Irrigation.
" Superintending Engineer, IV Circle.
" Public Department.
" Revenue "
" Presenters of the address.

IRRIGATION.
ESTABLISHMENT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 23rd.

Recd. *Encl.*

G.O., 23rd Aug. 1892, No. 711 I.

AUGUST.

Panjani Tank

The presenters of an address to His Excellency the Governor at Palmanér informed that the — and Gudiyátam river schemes will be re-investigated and the Superintending Engineer, IV Circle, requested to apply for the necessary establishment to complete investigation.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following papers:—

Proceedings of the Madras Government, Public Department, dated 29th June 1892, No. 449.

Abstract.—Communicating address presented by the Municipality of Anantapur to His Excellency the Lord Wenlock, G.C.I.E., on his sixth tour and His Excellency's reply.

Extract from "note" by the Chief Engineer for Irrigation, dated 10th August 1892.

The Bookacherla project has been investigated and plans prepared and "reported on" several times. It is on record that Colonel Anderson, R.E., an Irrigation officer of great eminence, "entertained a very unfavorable opinion of the project," and, in 1877, Colonel Mullins, R.E., then Chief Engineer for Irrigation, wrote a report on it which will be found with Proceedings of the Madras Government, No. 527, Revenue, dated 5th February 1877, since which the project has been looked upon, and it is considered justly, as finally condemned. Since that date, the Sangam works have been constructed on the Pennér and experience has shown us that, in bad years, the Pennér cannot satisfactorily perform the duties already expected of it.

Order—dated 23rd August 1892, No. 712 I., Public Works.

The presenters of the address will be informed that the reports of the Engineers, who have investigated the "Bookacherla project," are so unfavorable that the Government cannot undertake the work.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, III Circle.
" Public Department.
" Revenue "
" Presenters of the address.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 23rd.

Recd. *Encl.*

G.O., 23rd Aug. 1892, No. 712 I.

AUGUST.

Bookacherla Project

The presenters of an address to His Excellency the Governor at Anantapur informed that the reports of the Engineers who have investigated the — are so unfavorable that the Government cannot undertake the work.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

Proceedings of the Madras Government, Public Department, dated 29th June 1892, No. 449.

ABSTRACT.—Communicating address presented by the inhabitants of Bezváda to His Excellency the Lord Wenlock, G.C.I.E., on his sixth tour and His Excellency's reply.

Extract from "note" by the Chief Engineer for Irrigation, dated 10th August 1892.

The question of locks instead of, or in combination with, flood-gates on the Buckingham canal will be found discussed in note No. 35 I. (especially its para. 4) with Proceedings of the Madras Government, No. 242 I., dated 11th March 1892, the Government order on which sanctioned one lock ; that most urgently needed.

ORDER—dated 23rd August 1892, No. 713 I., Public Works.

The presenters of the address will be informed that sanction for a lock in combination with the flood-gate south of Chintamoney backwater has already been given and that another similar lock will be constructed where the Buckingham canal leaves the Pulicat lake near Coromandel when funds are available.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Public Department.
" Revenue "
" Presenters of the address.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 23rd.

Recd. *Encl.*

G.O., 23rd Aug. 1892, No. 713 I.

AUGUST.

Lock

The presenters of an address to His Excellency the Governor at Bezváda informed that sanction for a — in combination with the flood-gate south of Chintamoney back-water has already been given and that another near Coromandel will be constructed when funds are available.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 15th March 1892, Mis. No. 2560.

From the Superintending Engineer, I Circle, dated 20th July 1892, No. 884 G.D.

No. 136 I.

Submitted to Government with a recommendation that the list of "Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works Department," Godávari district, communicated with G.O., No. 407 I., dated 6th July 1887, be corrected as regards works Nos. 4 and 9 as shown in the subjoined statement and that works Nos. 5, 6, 7, and 8 be removed from the list and map.

Taluk.	No.	Source of supply.	Name of group or system.	Name of channel.	Name of tank.	Average cultivation.		Total of Imperial works in each group or system.	
						Area.	Revenue.	Area.	Revenue.
						ACS.	RS.	ACS.	RS.
Rajahmundry ..	4	Burada calva.	Surampalem anicut.	Surampalem channel.	Pedapatruni tank.	987	4,597	..	..
Do. ..	9	Do.	Pansalla anicut.	Pansalla anicut channel.	..	556	..	..	..

OOTACAMUND,
15th August 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 23rd August 1892, No. 714 I., Public Works.

The proposals of the Chief Engineer for Irrigation are approved.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch

To the Superintending Engineer, I Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 23rd.

Recd. *Encl.*

G.O., 23rd Aug. 1892, No. 714 I.

AUGUST.

Minor Irrigation Works

Certain corrections, &c., proposed by the Chief Engineer for Irrigation in the list of — under the charge of the Public Works Department in the Godávari district, approved.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—again the following paper :—

G.O., dated 18th July 1892, No. 617 I., Public Works.

Read—the following paper :—

From W. B. DEWINTON, Esq., Superintendent of Works, No. I Periyár division, to the Chief Engineer, Public Works Department, dated Kodaikánal, 6th June 1892, No. 42 C.E.

I have the honour to submit, for sanction of Government, an estimate with plan and report, amounting to Rs. 2,800, for constructing a Government rice bazaar at Periyár.

Note by the Chief Engineer, Public Works Department.

Submitted to Government.

2. The undersigned doubts the necessity for corrugated iron roofing. The Superintendent of Works should consider whether thatch or shingles cannot be used instead; either is a better roof than iron and the former is much cheaper.

OOTACAMUND,
20th August 1892.

(Signed) J. PENNYCUICK, Colonel, R.E.,
Chief Engineer, P.W.D.

Order—dated 18th July 1892, No. 617 I., Public Works.

Sanction to the estimate for constructing a Government rice bazaar at Periyár is deferred pending receipt of the report called for in G.O., No. 615 I., dated 15th July 1892.

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

READ—also the following paper :—

From W. B. DEWINTON, Esq., Superintendent of Works, No. I Periyár division, to the Chief Engineer, Public Works Department, dated Periyár, 5th August 1892, No. 98 C.E.

As directed in para. 2 of G.O., No. 615 I., Public Works, dated 15th July 1892, received by me on 23rd idem, I have the honour to report as follows on the manner in which the system of issuing rice to work people on this project is worked :—

(1) An agreement has been entered into for the supply of rice for one year with a supplier at Trichinopoly. Copy of this agreement is attached.

(2) The rice, when received at Periyár and Thekady, is examined and passed by a committee appointed by me. Copy of my order appointing the committee is attached.

(3) The rice is now retailed to all work people at a uniform rate of 5 measures per rupee, that rate being, at the present price of rice, ½ a measure per rupee cheaper than they can buy it in the local bazaar and about 1 measure dearer than they can buy it in their native villages. The object of selling it somewhat cheaper than the local rate is to attract and retain the labour without which this project could not proceed.

(4) The rice is issued to work people on cheques signed by persons authorized by me to do so. Copy of the regulations on the subject with list of authorized issuers is attached. The rice cheque books are similar except in size to the money cheque books in ordinary use.

(5) The value of the rice so issued is recovered at the next payment made.

I trust that the above documents will convince Government that the system is now being worked in a regular manner and with such precautions as to minimise the risk of loss beyond the amount which is incurred monthly in selling at a rather cheaper rate than that obtaining locally, which loss is unavoidable so long as rice remains at what are scarcity prices.

2. I do not understand the reference in the Government order to private dealers. No issues whatever of Government rice are made to such persons or to any one else not engaged in Government service. The rice is issued either to individuals or to the "kanganies" or headmen of each gang, with whom all money transactions in respect of their gangs are conducted.

3. The outstandings now amount to Rs. 986–1–0, of which about Rs. 400 will be recovered and the balance is probably irrecoverable owing to the want of a regular system in previous years. If my subordinates obey orders and I have made them all personally responsible for doing so, there is no fear of the accumulation of any future outstandings.

4. With regard to the orders contained in para. 4 of the Government order, I beg most respectfully to point out that to close the operations of the Government rice bazaar would be to close the works, because a rice famine would immediately ensue, it being impossible to trust to the local bazaarmen to supply rice in sufficient quantities, and the coolies would desert the works *en masse*. If it had been found possible to rely on the local supply, such a troublesome business as this rice bazaar would never have been started.

The whole thing is a nuisance, of which I would gladly be quit. It adds greatly to the labours of my office, and, so long as we are without a proper building in which to store our rice, we run great risk of having large quantities spoilt by the weather. It is, however, quite impossible to do without it if we are to continue this project and complete it in any reasonable time; nor is more rice obtained than is required and if it was possible to estimate the exact number of bags required monthly to prevent desertion, which it is not, I do not think our monthly supply would be reduced by 5 per cent.

5. I trust, therefore, that the above explanation will convince Government that the rice bazaars at Periyár and Thekady are indispensable to the continuance of this project and that it will be recognised that the expense and trouble entailed by them are repaid fourfold by the hold they give us over our labour.

ENCLOSURES.

Agreement.

I, P. Doraisawmy Iyer, do hereby agree to supply the undermentioned article in accordance with the conditions noted below and in consideration of payment being made by the Superintendent of Works, No. I Periyár division, at the rate specified in the following schedule for the quantity supplied :—

Description of article.	Rate of payment.
(1) Supplying second-sort boiled rice to the Government bazaar at Thekady or Periyár, including all charges of any kind whatsoever except prime cost of the rice, per bag of not less than 50 Madura measures	RS. A. P. 2 4 6

Conditions.

The rice to be supplied is second-sort boiled rice and is to be delivered in bags containing 50 Madura measures or thereabouts.

2. The probable quantity required per month will be—

	MEASURES.
At Thekady	10,000
At Periyár	40,000

but these quantities will be liable to increase or decrease at the discretion of the Superintendent of Works, No. I Periyár division, and the contractor will have no cause of complaint thereby. The amount required in any month will be communicated to the contractor on or before the 15th of the previous month and he must not exceed the amount thus given.

3. The rice may be delivered as often during the month as the contractor pleases. The monthly receipts will be examined once a fortnight or as often as may be necessary by a committee of three appointed for the purpose by the Superintendent of Works, both at Thekady and Periyár, who wlll decide on the quality of the rice supplied by comparing it with the sample delivered with the tender and on the quantity by measuring the contents of a certain number, not less than 10 per cent., of the bags delivered in each consignment, taken at random, or in such other way as the Superintendent of Works may direct, and calculating the total quantity of the consignment from the average contents of the bags examined. Their decision, both as to quantity and quality, may be annulled by the Superintendent of Works and that officer may be appealed to by the contractor against any decision of the committee. In either case the Superintendent of Works' decision will be final. A sample of the rice delivered with the tender will be kept at Periyár and Thekady for purposes of comparison.

4. If, in the opinion of the Superintendent of Works, the quality of the rice delivered is inferior to the sample, or the quantity delivered is below or much in excess of requirements, or if he considers that the contractor is not in any way acting honestly up to the terms of his agreement, the Superintendent of Works may inflict such fine or punishment on the contractor as he thinks fit, may reduce the contract rate, or annul the contract altogether, at his discretion, and the contractor shall have no cause of complaint thereby.

5. For the due and faithful performance of his contract, the contractor shall deposit Rs. 2,000 in Government promissory notes or other security, such security to bear interest during the continuance of the contract and to be forfeited at the discretion of the Superintendent of Works in the event of the contractor's failure to carry out his agreement.

11th June 1892. (Signed) P. DORAISAWMY IYER.

Witness.

(Signed) MAHOMED ABDUL AZIZ,
Head Clerk.

(True Copy.)

PERIYÁR,
5th August 1892.

(Signed) W. B. DE WINTON,
Supdt. of Works, No. I Periyár division.

No. 396-S.

The following rice committees are appointed :—

Periyár.

Civil Apothecary Mr. P. B. Gibbons, *President.*
Supervisor Mr. J. Bonnett ... ... } *Members.*
Head Clerk Mahomed Abdul Aziz Sahib }

Thekady.

Assistant Apothecary Mr. E. J. Baptist, A.M.D., *President.*
Sergeant W. Rule ... ... } *Members.*
Sub-division Clerk M. K. Cundaswamy }

The Sub-division officer will be good enough to preside over the committees occasionally in person.

THEKADY,
7th July 1892.

(Signed) W. B. DE WINTON,
Supdt. of Works, No. I Periyár division.

No. 302 S.

Rules for future issue of rice cheques.

Prin'ed rice cheque books have been obtained, each containing 150 cheques in counterfoil, numbered consecutively, *i.e.*, No. 1 book contains cheques Nos. 1 to 150, No. 2 book contains cheques Nos. 151 to 300, and so on.

2. One of these cheque books will be issued at a time to each person authorized to issue rice cheques, as per list given in para. 3, and the issue of rice chits from any other book or in any other form whatsoever is absolutely prohibited.

3. The following persons only are authorized to issue rice cheques :—

1. Sub-divisional Officer, Periyár.
2. Sub-divisional Officer, Transport and Stores.
3. Workshop Superintendent, Periyár.
4. Sub-Engineer, Main Dam.
5. Supervisor, Right Bank Escape.
6. Overseer, Mulyapanjan.
7. Sub-divisional Officer, Thekady.
8. Machinist and Tunneller.
9. Supervisor, Thekady.
10. Overseer at Thekady.
11. Civil Apothecary, Periyár.
12. Assistant Apothecary, Thekady.
13. Sub-overseer, Thekady.
14. Overseer, Periyár.
15. Superintendent of Works.
16. Manager, Superintendent of Works Office.

They will indent on the Superintendent of Works for such cheque books as they require and when issued the number of the book and the numbers of the cheques in it will be entered in a register kept for the purpose.

4. When a cheque book is issued to any of the persons mentioned in para. 3, the fact will be notified to the bazaar writer at Periyár or Thekady as the case may be, who will also keep a register of cheque books issued.

5. Rice cheques shall not be issued for more than 75 per cent. of the net amount due to the person to whom issued at the time of issue. Issuers will be held responsible that this rule is strictly observed, and, if in future it is found to be impossible to recover the value of rice issued because of non-observance of this rule, the deficit will be recovered from the issuer.

6. The bazaar writers will keep a separate file for rice cheques issued by each person authorized to do so and will return them to the issuers on the 1st, 11th and 21st of each month receiving in return a consolidated receipt for the lot, which will be their voucher for rise issues.

7. When the rice money is recovered the letter R in red ink will be entered on both cheque and counterfoil and the cheques will be filed in the office of issuer.

8. Completed rice cheque books should be sent to the Superintendent of Works office for record, when value of all rice issued in them has been recovered.

(Signed) W. B. DEWINTON,
Supdt. of Works, No. I Periyár division.

21st June 1892.

ORDER—dated 25th August 1892, No. 717 I., Public Works.

As now described, the more objectionable features of the former practice in connection with the management of the Government bazaar appear to have been removed.

2. It is presumed that rice cheques are issued only to *boná fide* work people and not to clerks, subordinates or contractors for works; on this understanding the continuance of the bazaar is sanctioned, but it will be the duty of the Superintendent of Works to see that the loss to Government is kept as low as possible and a special report upon the working of the bazaar during the past season should be submitted at the end of each season's work, in which full particulars of its financial working should be given.

3. The Examiner of Public Works Accounts will also submit from time to time, at such intervals as he may consider desirable, a note on the working of the bazaar as disclosed by the monthly accounts and will call attention to any excessive loss which may appear to be incurred.

4. It is not quite clear even now how the price is fixed from time to time; it is presumed that the Rs. 2–4–6 per bag is paid to the supplier in addition to the prime cost of the rice, but it is not stated how and by whom the latter is fixed, whether it is wholesale or retail, or how the selling price at the Periyár is regulated, whether by comparison with that charged by local dealers, or merely by the actual cost of the rice to Government. Report should be made upon these points.

5. With these remarks, the estimate, amounting to Rs. 2,800, submitted with the Superintendent of Works' letter No. 42 C.E., dated 6th June 1892, is sanctioned as follows from the balance of the amount reserved for unforeseen works of the Periyár project, which will then be reduced to Rs. 1,03,968 :—

Capital Expenditure not charged to Revenue.
49. Irrigation.
Periyár Project.
I. Works.
(1) Head Works.
K. Buildings.

	RS.
Constructing a Government rice bazaar, estimate	2,800

6. This sanction is registered as No. 92 I. of 1892–93.

7. The attention of the Superintendent of Works, No. I Periyár division, is invited to the remarks of the Chief Engineer, Public Works Department, in regard to the roofing of the rice bazaar.

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent of Works, No. I Periyár division,
with five enclosures.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 25th.

Recd. *Encl.*

G.O., 25th Aug. 1892, No. 717 I.

AUGUST.

Government Rice Bazaar at Periyar

Orders regarding the continuance of the — ; an estimate of Rs. 2,800 for constructing a building for the same sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper:—

From T. CHICHELE PLOWDEN, Esq., Resident at Hyderabad, to the Chief Secretary to the Government of Madras, dated 23rd May 1892, No. 3630.

With reference to the correspondence ending with your letter No. 188, Political, of the 19th November 1891, regarding the supply of water to the ryots of Sultanpúr from the Kurnool canal, I have the honour to forward, herewith, a translation of a ruka, No. 985, of the 16th April 1892, from His Highness the Nizam's Minister and of its enclosure * containing an application from the ryots of Ramayánipúr in His Highness' territory for the supply to them of water from the above-mentioned canal on the same terms as have been allowed to the ryots of Sultanpúr.

* One agreement.

2. I beg that the necessary arrangements may be made in the matter if there is no objection to the application being granted and that the orders of the Governor in Council may be communicated to me for the information of His Highness' Government.

Enclosures.

Translation of ruka from His Highness the Nizam's Minister, to the Resident, dated 16th April 1892, No. 985.

With reference to your ruka No. 3805, dated 24th December 1891, forwarding an agreement in Telugu made by the ryots of Sultanpúr regarding the water-supply from Kurnool canal, I beg to enclose a copy of a communication from the Revenue Department No. 104, dated 5th Ramzan, 1309 H., together with an agreement in Urdu made by the ryots of Ramayanipúr, Alpur taluk, Raichoor district, similar to that made by the Sultanpúr ryots. I shall feel obliged if you will kindly arrange for the water being supplied from the said canal to the ryots of Ramayanipúr.

Communication from the Revenue Department, to the Mulki Daftar, dated 5th Ramzan, 1309 H. (3rd April 1892), No. 104.

In reply to your rubkar No. 103, dated 27th Jamadi, 2nd 1309 H., I beg to enclose the agreement, in original, made by the ryots of Ramayanipúr regarding the water-supply from the Kurnool canal, received through the Subadar of Southern division, and to request that you will write and ask the Resident to be so good as to arrange for water being supplied to the said ryots. The ryots agree to pay the prescribed tax and to observe the conditions made by the Government of Madras. If the officer in charge of the canal wishes to see the said ryots he is at liberty to do so through the Tahsildar of Alpur.

2. Copy forwarded to the Subadar of the Southern division for information.

Translation of agreement made by the ryots of Ramayanipúr, Alpur taluk, Raichoor district, dated 25th Farwardi, 1301 Fasli (28th February 1892).

We the ryots of Ramayanipúr, Alpur taluk, Raichoor district, write these lines to say that we had applied to Government for a supply of water from the canal of the British Government and we have been ordered to submit an agreement similar to that made by the ryots of Sultanpúr;

therefore we write to say that we have applied to Government for a supply of water from the canal of the British Government. The Tahsildar of Alpur read to us the rules, &c., regarding the payment of water-tax, which we understood fully. We accept with our free will the conditions laid down by the British Government and write this agreement to say that we know the rate of the tax to be paid and we will give securities direct to the British Government for the payment of the tax and we do not in any way make the Nizam's Government responsible for the payment of the tax and the Nizam's Government will have no connection with the payment of this tax. We will not allow His Highness' Government to suffer in any respect in this matter. We will pay the tax to the British Government whenever it may fall due and will never give any chance of complaint. We have written these lines in the form of an agreement which is correct.

No. 963, Political.

Transferred to the Public Works (Irrigation) Department with reference to G.O., No. $\frac{472}{A}$ I., dated 1st September 1890.

(Signed) J. F. PRICE,
Chief Secretary.

31st May 1892.

From the Resident at Hyderabad, dated 2nd August 1892, No. 5139.

Endorsement by the Political Department, dated 11th August 1892, No. 1327.

ORDER—dated 25th August 1892, No. 720 I., Public Works.

The supply of water from the Kurnool-Cuddapah canal to the village of Ramayanipúr on the same terms as those laid down for the village of Sultanpúr in Proceedings of the Madras Government, No. $\frac{472}{A}$ I., Public Works, dated 1st September 1890, is sanctioned.

2. These Proceedings will be forwarded to the Resident at Hyderabad, through the Political Department, for communication to the Government of His Highness the Nizam.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, III Circle.
" Chief Engineer for Irrigation.
" Revenue Department.
" Political "

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 25th.

Recd. *Encl.*

G.O., 25th Aug. 1892, No. 720 I.

AUGUST.

Water

Orders laying down terms for the supply of — from the Kurnool-Cuddapah canal to the village of Ramayanipúr; copy of these Proceedings ordered to be forwarded to the Resident at Hyderabad.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper:—

No. 1413.

Progress Report of works in No. II Periyár Division for the month of July 1892.

I. *I to IV Reach,* 0 *to* $18\frac{1}{4}$ *miles.*—The contractor's accounts for earthwork, I Reach, have been closed. To complete the reach some Rs. 17,000 will be required. There will be no excess over revised estimate. The parts remaining to be completed are the rock cutting in the 4th chain and the removal of the rock between the two tanks.

2. There is nothing to note in the first four reaches; the bridge at 17 miles has just been commenced.

II. *V Reach,* $18\frac{1}{4}$ *to* $20\frac{1}{2}$ *miles.*—The masonry works have been completed except the two troughs for conveying tank water across the channel.

III. *VI Reach,* $20\frac{1}{2}$ *to* 24 *miles—Masonry.*—For the following works final bills have been received, the works being complete:—No. 1 culvert at 21 miles 4 furlongs; No. 2 culvert at 21 miles 7 furlongs; bridge at 21 miles 4 furlongs; superpassage at 23 miles 7 furlongs; No. 3 culvert at 24 miles 1 furlong. The new bridge at 23 miles 1 furlong has just been commenced.

Weir, Vedakulam tank.—Masonry for foundation both for body and retaining wall completed and wings raised 3 feet.

Earthwork.—Two and a-half miles out of $3\frac{1}{2}$ miles completed.

IV. *VII Reach,* 24 *to* $26\frac{3}{8}$ *miles.*—Culvert $24\frac{3}{4}$ miles completed; superpassage $25\frac{1}{2}$ miles completed except coping; culvert $26\frac{3}{8}$ miles practically completed.

Bridge, $26\frac{1}{2}$ *miles.*—Arch in progress.

Earthwork.—Except some turfing which has to be done to a few chains of bank where the soil is light, this is complete.

V. *VIII Reach,* $26\frac{3}{8}$ *to* $27\frac{1}{2}$ *miles—Weirs, Pappankulam tank.*—Completed.

Regulator.—Piers and abutments brought up $6\frac{1}{2}$ feet; ready for centring.

VI. *IX Reach,* $27\frac{1}{2}$ *to* 29 *miles.*—No. 1 culvert $27\frac{3}{4}$ miles, arch will be commenced; No. 2 culvert $28\frac{1}{4}$ miles, arch in progress.

Earthwork.—The two gaps left to pass water by the culverts under construction remain to be closed and a little rock removed in the first ten chains, when the reach will be completed.

VII. *X Reach,* 29 *to* $30\frac{1}{2}$ *miles.*—Culvert near 29th mile, covering stones being put on; work should be complete by end of August: No. 2 culvert $29\frac{1}{2}$ miles, walls brought up to $4\frac{1}{2}$ feet.

Materials have been collected for the two irrigation sluices, 9th and 10th reaches.

Earthwork.—All that remains in the 10th reach is to fill up the gaps left for the passage of water near the culverts under construction.

VIII. *Branch channels.*—The head sluices to the IX and X are under construction and about half completed.

Earthwork in the IX is being rapidly pushed; nearly 1,000 coolies are employed daily.

IX. The season is favorable with occasional slight showers; the daily average of labourers of all sorts was 2,500.

3. There has been no sickness.

MADURA,
7th August 1892.

(Signed) G. P. CARLESS,
Executive Engineer.

No. 201-P.R.

Copy submitted to the Chief Engineer, Public Works Department.

2. A final bill, amounting to Rs. 11,102–2–6, has just been received from the Executive Engineer for earthwork done in the I Reach by contractor Venkataswami Naidu; it will be disposed of shortly after inspection of work by undersigned.

TRICHINOPOLY,
11th August 1892.

(Signed) A. C. SMITH, Lieut.-Col., R.E.,
Superintending Engineer, VI Circle.

Note by the Chief Engineer for Irrigation, Public Works Department.

Submitted for the information of Government. The report calls for no special remarks.

OOTACAMUND,
20th August 1892.

(Signed) J. PENNYCUICK, Colonel, R.E.,
Chief Engineer, P.W.D.

ORDER—dated 25th August 1892, No. 721 I., Public Works.

Recorded and forwarded to the Government of India.

(Here enter No. 722 I., Public Works, dated 25th August 1892.)

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, VI Circle.
" Chief Engineer for Irrigation.
" Revenue Department.

ENDORSEMENT—dated 25th August 1892, No. 722 I., Public Works.

Copy of the above forwarded to the Government of India.

(By Order)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt. P.W.D.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 25th.

Recd. *Encl.*

G.O., 25th Aug. 1892, Nos. 721, 722 I.

AUGUST.

Periyar Project

Forwarding copy of Proceedings recording the progress report of works in No. II Periyár division for July 1892.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers:—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 22nd July 1892, No. 511 G.N.

I have the honour to request sanction of Government to write off the accounts of the Rushikulya division the value of stores, &c., burnt when the store-shed at Madhavaborida took fire as per appended list received from the Executive Engineer, Rushikulya division.

2. The total loss amounts to Rs. 169–8–9, which does not include the value of the shed burnt down, as also the cost of two archimedian screws, embodied in the list.

3. The value of the screws could not be given, as they were transferred from Ganjam division in 1886 without their cost having been debited to Rushikulya project. The Executive Engineer, Ganjam division, who was asked to report the value of screws, states that no clue regarding their original cost can be found in his office, except an entry in July 1885 that six screws were repaired in Dowlaishweram Workshops at a cost of Rs. 275. The estimated value of the two screws may be taken as Rs. 200 under Public Works Code, para. 1728, as introduced by S.O., No. 1003, dated 25th November 1889.

4. The accident which resulted in the above loss occurred on 7th May 1891 and a copy of the Executive Engineer's letter No. 200, dated 5th May 1892, herein enclosed for your information, shows that the occurrence was purely accidental.

Enclosures.

From W. C. deMORGAN, Esq., Executive Engineer, Rushikulya division, to the Superintending Engineer, I Circle, dated 5th May 1892, No. 200.

With reference to your No. C. 173 of 21st March 1892, I have the honour to report as follows:—

The accident occurred on 7th May 1891 at about 1 p.m. The fire broke out in the store-shed at Madhavaborida; work people were cooking at the time and a strong wind was blowing. It is probable that a spark was blown into the thatch. Although there were firehcoks and pots of water ready in case of such an accident, the sub-overseer was unable to put the fire out. The thatch was perfectly dry and the wind fanned the flame. I am, therefore, of opinion that the occurrence was purely accidental. I have the honour to request permission to write off the value of the property lost according to the accompanying list.

List of damaged stores, &c., by fire at Madhavaborida on the forenoon of 7th May 1891.

Quantity.	Description.		Rate. RS.	A.	P.	Amount. RS.	A.	P.
	Carpenters' shed.							
2	Packets of head sluice shutters ..	Each.	3	0	0	6	0	0
	All matams		..			20	0	0
100	Planks	Each.	0	3	0	18	12	0
1	Lime truck	,,	5	0	0	5	0	0
3	Wooden beams	,,	2	0	0	6	0	0
12	Frames belonging to shutters ..	,,	1	0	0	12	0	0
4	Centrings of No. I, U.T.M. canal ..		..			10	0	0
5	Teakwood packages	Each.	3	0	0	15	0	0
15	Water cans	,,	0	8	0	7	8	0
20	Axles (wooden) of rail trucks ..	,,	0	4	0	5	0	0
5	Lime paras	,,	0	6	0	1	14	0
10	Mortar boxes	,,	0	4	0	2	8	0
2	Wooden wheels of rail trucks ..	,,	4	0	0	8	0	0
1	Yoke of big cart	,,	7	0	0	7	0	0
2	Bellows	,,	2	8	0	5	0	0

Quantity.	Description.		Rate. RS. A. P.	Amount. RS. A. P.
	Store.			
4	Perforated zinc sheets	Each.	2 10 0	10 8 0
1	Belt piece *	..	..	
20	Planks	Each.	0 3 0	3 12 0
20	Cavidy ropes	,,	0 1 0	1 4 0
40	Hand baskets	,,	0 1 0	2 8 0
70	Bamboo baskets	,,	0 0 6	2 3 0
10	Packs or gunnies	,,	0 4 0	2 8 0
3	Bundles tier ropes (big)	,,	0 4 0	0 12 0
2½	Visses red lead	Viss.	0 6 6	1 0 3
1½	Viss rozen	,,	0 5 4	0 8 0
4	Visses twine	,,	0 6 0	1 8 0
4	,, red ochre	,,	0 2 0	0 8 0
1	Empty cask	Each.	0 1 0	0 1 0
9	Bundles thread	..	..	0 4 0
70	Big water pots (broken)	Each.	0 1 0	4 6 0
25	Small water pots	,,	0 0 6	0 12 6
•32	Coir ropes	,,	0 0 6	1 0 0
9	Lb. tallow	4½lb.	1 0 0	2 0 0
2	Visses coal	Viss.	0 4 0	0 8 0
10	,, hemp	5 viss.	1 0 0	2 0 0
2	Archimedian screws †	..	..	..
4	Masons' squares	Each.	0 8 0	2 0 0
		Total ..	..	169 8 9

* Component part of machinery; there is no separate value.
† Transferred from Ganjam in 1886. The cost was not debited to the project.

(Signed) W. C. deMORGAN,
Executive Engineer, Rushikulya division.

5th May 1892.

Office-note to the Examiner, Public Works Accounts, dated 6th August 1892, No. 223.
,, from ,, ,, ,, ,, 15th ,, ,, ,, 699 C.

Order—dated 26th August 1892, No. 728 I., Public Works.

Under the circumstances reported, the value of the stores, &c., destroyed by fire will be finally charged off to the works for which they were purchased.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
,, Chief Engineer for Irrigation.
,, Examiner, Public Works Accounts.
,, Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 26th.

Recd. *Encl.*

G.O., 26th Aug. 1892, No. 728 I.

AUGUST.

Stores, &c., at Madhavaborida

Value of —, in the Rushikulya division, destroyed by fire, ordered to be charged off to the works for which they were purchased.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From Lieut.-Colonel D. McN. CAMPBELL, R.E., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepâk, 11th July 1892, No. 207 E.I.

I have the honour to submit, for sanction of Government, the enclosed estimate of Rs. 3,230 for constructing new stone revetment to the bund of Kuvakolli tank, Imperial No. 2, in Tiruvallúr taluk. The necessity for the work is explained in the report accompanying the estimate.

Memorandum to the Superintending Engineer, V Circle, dated 20th July 1892, No. V/53 C.N.

From W. HUGHES, Esq., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepâk, 13th August 1892, No. 235 E.I.

With reference to your memo. No. V/53 C.N., dated 20th July 1892, I have the honour to state that the outlay on the Kuvakolli tank during the last four years was Rs. 1,414 and was incurred in 1891–92.

ORDER—dated 26th August 1892, No. 729 I., Public Works.

The following estimate is sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P. W. D.
Original Works.

	RS.
Constructing new stone revetment to the bund of Kuvakolli tank, No. 2 of list of works in Tiruvalúlr taluk, Chingleput district, appended to G.O., No. 407 I., dated 6th July 1887, estimate ...	3,230

2. This sanction is registered as No. 93 I. of 1892–93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, V Circle, with four enclosures.
„ Chief Engineer for Irrigation.
„ Examiner of Public Works Accounts.
„ Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 26th.

Recd. *Encl.*

G.O., 26th Aug. 1892, No. 729 I.

AUGUST.

Kuvakolli Tank.

Estimate of Rs. 3,230 for constructing new stone revetment to the bund of — in Tiruvallúr taluk, Chingleput district, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—again the following paper :—

G.O., dated 28th March 1889, No. 175 I., Public Works.

Read—the following paper :—

G.O., dated 20th March 1889, No. 516, Judicial.

Read—again the following paper :—

G.O., dated 25th January 1889, No. 145, Judicial.

Read—also the following paper :—

No. 13 I.

Note by the Chief Engineer for Irrigation.

With reference to para. 3 of G.O., No. 145, Judicial, dated 25th January 1889, I would request a reference to the note of the Chief Engineer for Irrigation, dated 29th June 1885, printed with Proceedings of the Madras Government, No. 1116, dated 25th July 1885, with which I entirely agree, but I see no objection to the charge for the towage of boats of Government officers on duty when they can be taken on a trip made by a steamer up the river on Public Works Department work being only such as the Executive Engineer in charge of the steamers may consider will cover the extra expenditure in working the steamer due to the extra towage.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

15th February 1889.

No. 885 C.

Transferred to the Judicial Department with reference to para. 3 of their order No. 145, dated 25th January 1889.

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

22nd February 1889.

Order—dated 20th March 1889, No. 516, Judicial.

The Government accept the Chief Engineer's suggestion in the foregoing note.

(True Extract.)

(Signed) A. G. CARDEW,
Under-Secretary.

Order—dated 28th March 1889, No. 175 I., Public Works

Communicated to the Chief Engineer for Irrigation and the Superintending Engineer, I Circle.

(True Extract.)

(Signed) A. A. G. MALET,
Under-Secy. to Govt., P.W.D.,
Irrigation Branch.

READ—also the following papers :—

G.O., dated 23rd October 1890, No. 1628, Judicial.

G.O., dated 23rd July 1892, No. 1324, Judicial.

Read—the following paper :—

From the Acting Special Assistant Agent, Godávari, dated 27th June 1892, No. 189.

* * * * *

2. The Special Assistant Agent has to go up to Bhadráchalam every year in October after the rains for the examination of the sub-treasury and the sub-jail for the inspection of crops in the taluk and for the disposal of civil and criminal business. The discomforts, not to speak of the dangers, attendant upon travelling himself in a staff boat and his establishment in a dirty cargo boat against the heavy stream that is running at that season are many. The journey generally occupies about ten days and the arrears of work, which accumulate during that time and which have to be worked off at the conclusion of the journey, are always considerable and call for extra heavy work from my clerks before they are disposed of.

3. The Board of Revenue recommended the supply of a steam launch to him (Special Assistant Agent—*vide* para. 25 of Board's Proceedings, No. 905, dated 30th December 1889) and the Government was pleased to remark that it would approve of arrangements being made with the Public Works Department, whereby he might be enabled to use a launch belonging to that department free of charge to himself on the occasion of his yearly visit to Bhadráchalam as well as in any case of public emergency (*vide* para. 4 of G.O., No. 1628, dated 23rd October 1890, Judicial). On a reference made by Mr. Happell, the Executive Engineer, Eastern division, said that the Government order had not been communicated to his department and that it did not therefore concern him in any way.

4. I request you to move Government to arrange with Public Works Department to furnish the Special Assistant Agent with a steam launch in his annual visit to Bhadráchalam in October and in cases of emergency free of charge.

Endorsement by the Collector of Godávari, dated 6th July 1892, No. 55.

Submitted to Government, for sanction, in reference to para. 4 of G.O., dated 23rd October 1890, No. 1628, Judicial.

Order—dated 23rd July 1892, No. 1324, Judicial.

G.O., dated 23rd October 1890, No. 1628, Judicial, will now be communicated to the Public Works Department with the request that the necessary action may be taken on para. 4 of the order.

(True Extract.)

(Signed) J. F. PRICE,
Chief Secretary.

No. 137 I.

Note by the Chief Engineer for Irrigation.

With reference to G.O., No. 1324, dated 23rd July 1892, communicating to this department G.O., No. 1628, dated 23rd October 1890, for necessary action on its para. 4, I would suggest that the Superintending Engineer, I Circle, be instructed to "furnish the Special Assistant Agent with a steam launch on his annual visit to Bhadráchalam in October and in cases of emergency" when one of the steamers can be spared from its legitimate work without serious inconvenience.

2. As regards the desire, however, that this should be done "free of charge," I would refer to Proceedings of the Madras Government, No. 1116, Financial, dated 25th July 1885, and G.O., No. 516, Judicial, dated 20th March 1889; in the latter, Government approved of the suggestion that, when the boats of Government officers on duty "can be taken on a trip made by a steamer up the river (Godávari) on Public Works Department duty" only "such charge shall be made as the Executive Engineer in charge of the steamers may consider will cover the extra expenditure in working the steamer due to the extra towage" instead of the charge in force or laid down in the "tables of charges" for such steamers.

Ootacamund,
18th August 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 26th August 1892, No. 730 I., Public Works.

The course suggested in para. 1 of the note of the Chief Engineer for Irrigation will be adopted.

2. The charges to be made for the use of the steamers will be such as are in force or appear in the "table of charges," except when the Special Assistant's boat can be towed by a steamer proceeding up the river on Public Works Department duty, in which case the charge will be merely what it is considered will cover the extra expenditure on the trip due to the towage of the boat.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" Examiner, Public Works Accounts.
" Judicial Department.
" Revenue "

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 26th.

Recd. *Encl.*

G.O., 26th Aug. 1892, No. 730 I.

AUGUST.

Steam Launch

The course suggested by the Chief Engineer for Irrigation as to furnishing the Special Assistant Agent, Godávari, with a — on his annual visit to Bhadráchalam in October and in cases of emergency, approved, with remarks, for adoption.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From W. B. DEWINTON, Esq., Superintendent of Works, No. I Periyár division, to the Chief Engineer, Public Works Department, dated Periyár, 16th August 1892, No. 112 C.E.

With reference to G.O., No. 1873 W., dated 27th June 1892, I have the honour to forward, herewith, a plan and estimate, amounting to Rs. 3,650, for constructing a wooden barge for the steam dredger now on its way out from England for this project and to request sanction for the same.

ORDER—dated 29th August 1892, No. 737 I., Public Works.

The following estimate is sanctioned from the balance of amount reserved for tools and plant required for the Periyár project, which will then be reduced to Rs. 57,850 :—

Capital Expenditure not charged to Revenue.
49. Irrigation.
Periyár Project.
III. Tools and Plant.
12. Miscellaneous.

	RS.
Constructing a wooden barge for the steam dredger, estimate ...	3,650

2. This sanction is registered as No. 95 I. of 1892–93.

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Superintendent of Works, No. I Periyár division, with 3 enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 29th.

Recd. *Encl.*

G.O., 29th Aug. 1892, No. 737 I.

AUGUST.

Periyar Project

Wooden Barge.—Estimate of Rs. 3,650 for constructing a — for the steam dredger in No. I Periyár division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

From J. W. MARTIN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 6th August 1892, No. 1164 K.S.

As the balance now available at my disposal for unforeseen works of the Kistna delta system is only Rs. 949, I have the honour to forward herewith, for your approval and sanction of Government from the balance available at its disposal, an estimate for Rs. 1,080 for constructing fender piles to the heads of Kamalapuram lock weir and Bantumilli main distributary channels in the Gudiváda division.

2. The necessity for the work was reported on by my predecessor in his inspection notes under date the 11th September 1891.

ORDER—dated 29th August 1892, No. 738 I., Public Works.

The following estimate is sanctioned from the balance of the lump sum provision available for unforeseen works of the Kistna delta system, which will then be reduced to Rs. 82,780:—

Capital expenditure not charged to Revenue.
49. Irrigation.
Kistna Delta System.
Eastern Section.
Gudiváda Division.
Bantumilli Canal.
(3) Distributaries.
C. Works.

	RS.
Constructing fender piles to the heads of Kamalapuram lock weir and Bantumilli main distributary channels, estimate	1,080

2. This sanction is registered as No. 94 I. of 1892-93.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle, with one estimate.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 29th.

Recd. *Encl.*

G.O., 29th Aug. 1892, No. 738 I.

AUGUST.

Kamalapuram Lock Weir and Bantumilli Main Distributary Channels

Estimate of Rs. 1,080 for constructing fender piles to the heads of —, Kistna delta system, in the Godávari division, sanctioned,

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 30th June 1892, No. 393 G.N.

I have the honour to submit, herewith, an estimate for Rs. 4,100 for constructing an aqueduct at $37\frac{9}{16}$ miles + 20 (40·75 old mileage) of Rushikulya canal and to request that you will be so good as to approve of and obtain sanction of Government to the same.

2. This aqueduct is to take the place of the under-tunnel of two arches of nine feet span provided in the revised estimates of Rushikulya project sanctioned in G.O., No. 482 I., dated 4th September 1890.

To the Superintending Engineer, I Circle, dated 8th July 1892, No. I/59 G.N.
From " " I " " 9th Aug. " " 550 "

No. 138 I.

Submitted to Government. The estimate, as altered in this office, amounts to Rs. 4,000.

OOTACAMUND,
22nd August 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 30th August 1892, No. 741 I., Public Works.

The following estimate is sanctioned against the sum of Rs. 4,000 provided in the revised estimate for the Rushikulya project printed in Proceedings of Madras

Government No. 482 I., dated 4th September 1890, for an under-tunnel of two arches of nine feet span, Rushikulya canal, at 40·75 miles :—

Famine Relief and Insurance.
35. Protective Irrigation Works.
Rushikulya Project.
Rushikulya Section.
I. Works.
(2) Main Canals and Branches.
Rushikulya Canal.
F. (1) Other Cross Drainage Works.

	RS.
Constructing an aqueduct at $37\frac{9}{16}$ miles 20 feet (40·75 old mileage), estimate	4,000

2. This sanction is registered as No. 96 I. of 1892–93.

(True Extract.)

(Signed) G. T. WALCH.
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle, with five enclosures.
,, Chief Engineer for Irrigation.
,, Examiner, Public Works Accounts.
,, Revenue Department.
Editors' Table.

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 30th.

Recd. *Encl.*

G.O., 30th Aug. 1892, No. 741 I.

AUGUST.

Rushikulya Project

Aqueduct.—Estimate of Rs. 4,000 for constructing an —at 37 $\frac{9}{10}$ miles 20 feet of the Rushikulya canal, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—again the following papers :—

G.O., dated 4th Sept. 1890, No. 480 I., Public Works.
" " 20th May 1892 " 480 I. "
" " 28th " " 502 I. "

Read—also the following papers :—

From J. THOMSON, Esq., Collector of the Chingleput district, to the Executive Engineer, Chingleput division, dated Saidápet, 6th August 1892, No. 2834-Eng.

I have the honour to request that you will be good enough to state whether, in the present state of supply in the Cholavaram and Red Hills tanks, irrigation under them can proceed or water be supplied at least for seed-beds.

Letter from the Executive Engineer, Chingleput division, dated 10th Aug. 1892, No. 2112.
Endorsement of the Superintending Engineer, V Circle " 19th " " 246.

No. 140 I.

Note by the Chief Engineer for Irrigation.

The water is flowing in from the Tamarapâk anicut to the Cholavaram tank upwards of two feet deep (on 20th).

2. It is of course being passed on to the Red Hills tank as quickly as possible and that tank will, I expect, soon be up to + 37, at which level the Superintending Engineer suggests that issues for seed-beds shall commence.

3. But the supply by gravitation to Madras cannot be considered well assured till the level is + 38 and I would propose that the orders, No. 502 I., dated 28th May 1892, remain in force till the Red Hills tank has attained that level, when irrigation under both tanks might be resumed within the prescribed limits, care being taken to issue only what is necessary for "seed-beds" till transplantation is commenced, and then only to the extent necessary for the actual areas stated by the Revenue authorities as laid down in G.O., No. 480 I., dated 4th September 1890.

Ootacamund,
26th August 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 31st August 1892, No. 742 I., Public Works.

The proposals of the Chief Engineer for Irrigation with reference to the resumption of irrigation under the Cholavaram and Red Hills tanks are approved and the Superintending Engineer, V Circle, will see that they are put in force.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle.
" Collector of Chingleput.
" President, Municipal Commission, Madras.
" Revenue Department.
" Local and Municipal Department.

IRRIGATION.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 31st.

Recd. *Encl.*

G.O., 31st Aug. 1892, No. 742 I.

AUGUST.

Cholavaram and Red Hills Tanks

Proposals of the Chief Engineer for Irrigation regarding the resumption of irrigation under the — approved and requisite instructions to the Superintending Engineer, V Circle, issued.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers:—

From the Superintending Engineer, IV Circle, dated				24th Nov. 1891,	No.	253 E.I.
To	„	„	„	„ 14th Dec. „	„	76 C.I.
From	„	„	„	„ 30th June 1892	„	132 E.I.
To	„	„	„	„ 20th July „	„	23 C.I.

From J. C. Larminie, Esq., Executive Engineer, Coimbatore division, to the Superintending Engineer, IV Circle, dated Coimbatore, 30th July 1892, No. 2812.

With reference to your endorsement No. 411 C.I. of 22nd instant, I have the honour to state that the first report of a probable excess on the estimate for construction of a dam on Dhully channel was made by the Sub-division officer about the middle of August last. On the 19th idem I inspected the work, but it was not until towards the end of September that the Sub-division officer could be got to understand that a revised estimate was required. This was submitted with this office No. 6720 of the 14th November last, but was returned with your endorsement No. 1171 C.I. of 20th December 1891. In accordance with those instructions a completion report was sent in when the accounts were closed. The work was in full swing when the report of the probable excess was received on the 14th August and when inspected on the 19th August it was near completion, so there was very little time in which a revised estimate could have been prepared. The cause of excess was the lower level than had been anticipated, at which rock fit to build upon was found.

No. 163 E.I.

Submitted to the Chief Engineer for Irrigation with reference to his memo. No. IV/23 C.I., dated 20th ultimo, with an intimation that, in the circumstances stated in the foregoing letter, the excess expenditure may be passed.

(Signed) R. R. E. Drake-Brockman, Lt.-Col., R.E.,
Superintending Engineer, IV Circle.

3rd August 1892.

Office-note to the Examiner, Public Works Accounts, dated 10th August 1892, No. 227.
„ from „ „ „ „ 17th „ „ 732.

No. 139 I.

Submitted to Government.

2. The original estimate for the work was, it appears, sanctioned by the *Superintending Engineer* "through an oversight;" the work has been carried out and it is recommended that the Examiner of Public Works Accounts be authorised to pass the expenditure on it.

Ootacamund,
22nd August 1892.

(Signed) G. T. WALCH,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 31st August 1892, No. 743 I., Public Works.

The Examiner of Public Works Accounts is authorised to pass the expenditure of Rs. 8,684 shown in the completion report forwarded by the Superintending Engineer, IV Circle, to have been incurred in constructing a masonry escape at the site of No. 1 breach in Dhully channel in the Coimbatore division.

(True Extract.)

(Signed) G. T. WALCH,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, IV Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts, with one completion report.
" Revenue Department.
Editors' Table

IRRIGATION.
ACCOUNT.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated August, 31st.

Recd. *Encl.*

G.O., 31st Aug. 1892, No. 743 I.

AUGUST.

Dhully Channel

The Examiner of Public Works Accounts authorised to pass the expenditure shown in the completion report for constructing a masonry escape at the site of No. 1 breach in — in the Coimbatore division.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

TABULAR STATEMENT OF MISCELLANEOUS PROCEEDINGS AND MATTERS OF ROUTINE.

IRRIGATION.

FOR THE MONTH OF AUGUST 1892.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Natural streams.—Proceedings, Revenue Department, expressing the views of Government regarding the rights of riparian proprietors in the waters of —, communicated to Superintending Engineers with remarks.	1st August 1892, No. 650 I.	......
Land.—Certain alteration suggested by the Collector of Ganjam in the notification for acquisition of — in the Hugulapatta village, Berhampore taluk, required for the Rushikulya project, ordered accordingly.	1st do. do. No. 651 I.	......
Land.—Notification for acquisition of — required for a surplus sluice in the left bank of Purushottapur channel in the Ganjam district, ordered to be published in the *Fort St. George Gazette.*	1st do. do. No. 652 I.	15th June 1892, No. 3042 C.
Lands.—Notifications for acquisition of — required for Chitrapur channel, Kanakivalli and Polraza drains in the Kistna district, ordered to be published in the *Fort St. George Gazette.*	1st do. do. No. 653 I.	......
Land.—Notification for acquisition of — required for the Rushikulya canal, ordered to be published in the *Fort St. George Gazette.*	1st do. do. No. 654 I.	......
Land.—Notification for acquisition of — required for the diversion of Peevoikal drainage in Vitlankatlai hamlet of Ramanujapuram village, Kumbakónam taluk, ordered to be published in the *Fort St. George Gazette.*	1st do. do. No. 655 I.	......
Land.—Notification for acquisition of — required for a minor channel in Purini in Nellore district, ordered to be published in the *Fort St. George Gazette.*	1st do. do. No. 656 I.	25th June 1892, No. 302 I.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Land.—Notification for acquisition of — required for improvements to the Poiney Western channel in the village of Veeranthangal, Chittoor taluk, ordered to be published in the *Fort St. George Gazette.*	1st August 1892, No. 657 I.	18th July 1892, No. 3567 C.
Land.—Notification for acquisition of — for repairs to earthwork, Bank canal, Godávari district, ordered to be published in the *Fort St. George Gazette.*	1st do. do. No. 658 I.	......
Land.—Notification for acquisition of — for digging side channel from Teki sluice to supply Machara and Vakatippa channels in the Godávari district, ordered to be published in the *Fort St. George Gazette.*	6th do. do. No. 669 I.	......
Land.—Notification for acquisition of — required for the diversion of Bank canal below Masakapalli lock in the Godávari district, ordered to be published in the *Fort St. George Gazette.*	6th do. do. No. 670 I.	......
Land.—Notification for acquisition of — required for excavating Anatavaram channel in the Godávari district, ordered to be published in the *Fort St. George Gazette.*	6th do. do. No. 671 I.	......
Credit.—Telegram to the Examiner, Public Works Accounts, requesting him to issue a — of Rs. 2,000 to Rushikulya Deputy Collector for settling compensation for land.	8th do. do. No. $\frac{671}{A.}$ I.	13th June 1892, No. 532 I.
Land.—Notification for acquisition of — required for the Goomsur anicut (Rushikulya project) in the Ganjam district, ordered to be published in the *Fort St. George Gazette.*	9th do. do. No. 672 I.	......
Land.—Notification for acquisition of — required for the Machavaripollem channel in the Nellore district, ordered to be published in the *Fort St. George Gazette.*	9th do. do. No. 673 I.	12th July 1892, No. 3495 C.
Land.—Notification for acquisition of — required for the flood bank of Melamadai-Periakulam tank in the Tinnevelly district, ordered to be published in the *Fort St. George Gazette.*	9th do. do. No. 674 I.	......
Land.—Notification for acquisition of — required for improvements to the Kurchi anicut in the Coimbatore district, ordered to be published in the *Fort St. George Gazette.*	9th do. do. No. 675 I.	......
Provincial Statement of Objectionable Items, &c., for 31st March 1892, III Circle, Appropriations.—Orders on the —.	9th do. do. No. 678 I.	9th Dec. 1891, No. 3311 W. 19th Feb. 1892, No. 547 W. 17th Mar. 1892, No. 888 W. 30th Mar. 1892, No. 323 I. 25th April 1892, No. 1305 W.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Provincial Statement of Objectionable Items, &c., for 31st March 1892, *No. I Periyár Division, Appropriations.*—Orders on the —.	12th Aug. 1892, No. 684 I.	19th June 1891, No. 495 I. 17th Aug. 1891, No. 663 I. 4th Dec. 1891, No. 926 I. 17th Dec. 1891, No. 961 I. 17th Feb. 1892, No. 157 I. 8th April 1892, No. 359 I. 27th June 1892, No. 560 I.
Land.—Notification for acquisition of — required in Pothanda and other villages in the Ganjam district for cattle crossings across the Rushikulya canal, ordered to be published in the *Fort St. George Gazette.*	13th Aug. 1892, No. 687 I.	......
Land.—Notification for acquisition of — required for the diversion of Buckingham canal in the villages of Penubakkam and Chengalpolam, Gúdúr taluk, ordered to be published in the *Fort St. George Gazette.*	13th do. do. No. 688 I.	......
Appropriations.—Letter from the Government of India requesting to take measures to prevent irregularities in future in respect to — in the accounts of the Irrigation Branch, Madras, and inviting attention to certain rules in the Public Works Department Code, Volume II, communicated to the Chief Engineer for Irrigation.	13th do. do. No. 689 I.	8th June 1892, No. 520 I. 24th June 1892, No. 558 I. 27th June 1892, No. 561 I. 27th June 1892, No. 562 I. 27th June 1892, No. 563 I. 28th June 1892, No. 569 I. 9th July 1892, No. 593 I.
Minor Irrigation Works.—Board's Proceedings reviewing the progress report of — for April and May 1892, recorded.	17th do. do. No. 691 I.	19th May 1892, No. 474 I. and file.
Minor Irrigation Works.—Board's Proceedings reviewing the expenditure on — during the year 1891-92, recorded.	17th do. do. No. 692 I.	21st Aug. 1891, No. 660 I.
Store sheds at site of Godahollow aqueduct.—Application from the Superintending Engineer, I Circle, to write off the accounts of the work the articles lost along with the — which were burnt down, sanctioned.	18th do. do. No. 694 I.	......
Bridge.—Considering the provision of a — unnecessary at the site proposed by Subban Chetty and others of Niretan village, Madura, near the super-passage in reach No. 2, No. II Periyár division.	19th do. do. No. 695 I.	23rd June 1892, No. 3188 C.
Provincial Statement of Objectionable Items, &c., for 31st March 1892, *V Circle, Appropriations.*—Orders on the —.	19th do. do. No. 696 I.	......

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Provincial Statement of Objectionable Items, &c., for 31st March 1892, VI Circle, Appropriations.—Orders on the —.	20th Aug. 1892, No. 700 I.	......
Suradá Reservoir works.—Correspondence regarding the sanction accorded for charging finally to the work the value of certain materials collected for the —, Rushikulya project, which have been washed away by floods, &c., recorded.	20th do. do. No. 701 I.	11th July 1892, No. 600 I. 15th July 1892, No. 615 I. 2nd Aug. 1892, No. 3711 C.
Godávari works.—Ordered that a letter be forwarded to the Chief Commissioner, Central Provinces, Nagpore, returning certain documents in connection with the —, and requesting to supply this Government with spare copies of certain printed documents.	20th do. do. No. 702 I.	......
Addressed accordingly	20th do. do. No. 703 I.	......
Provincial Statement of Objectionable Items, &c., for 31st May 1892, No. I Periyár division, Estimates.—Orders on the —.	22nd do. do. No. 705 I.	15th May 1891, No. 415 I. 17th Aug. 1891, No. 637 I. 2nd Dec. 1891, No. 922 I. 17th Dec. 1891, No. 963 I. 17th Dec. 1891, No. 964 I. 22nd Feb. 1892, No. 182 I. 7th April 1892, No. 357 I. 4th April 1892, No. 346 I. 20th April 1892, No. 392 I. 14th May 1892, No. 458 I.
Addresses.—Proceedings, Public Department, furnishing copy of the — presented to, and replies given by His Excellency the Governor at the Pálár causeway opening ceremony, recorded.	23rd do. do. No. 715 I.	......
Water.—Telegram to the Resident at Hyderabad to say that supply of — from Kurnool canal to Ramayanipur has been sanctioned, and that the Proceedings of Government follows.	23rd do. do. No. 715-A.	......
Administration Report of the Public Works Department, Irrigation Branch.—Memorandum from the Financial Department requesting that in future only three copies of the — be supplied to that office, recorded.	24th do. do. No. 716 I.	......
Provincial Statement of Objectionable Items, &c., for 31st May 1892, III Circle, Estimates.—Orders on the —.	25th do. do. No. 718 I.	11th May 1892, No. 450 I and file.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Provincial Statement of Objectionable Items, &c., for 31st May 1892, *V Circle, Estimates.*—Orders on the —.	25th Aug. 1892, No. 719 I.	2nd Dec. 1890, No. 704 I. 18th Feb. 1891, No. 149 I. 9th May 1891, No. 398 I. 11th Aug. 1891, No. 618 I. 8th Dec. 1891, No. 932 I. 15th Feb. 1892, No. 151 I. 17th May 1892, No. 467 I.
Land.—Notification for acquisition of — required for excavating Tapeswarum high level channel in the Godavári district, ordered to be published in the *Fort St. George Gazette.*	26th do. do. No. 723 I.	......
Land.—Notification for acquisition of — required for diverting the river bank at Merlapalem at 10½ miles, Gowtami embankment in the Godavári district, ordered to be published in the *Fort St. George Gazette.*	26th do. do. No. 724 I.	......
Land.—Notification for acquisition of — required for a siding basin at Kanupur village in the Nellore district, ordered to be published in the *Fort St. George Gazette.*	26th do. do. No. 725 I.	......
Land.—Notification for acquisition of — required in certain villages of Cumbum taluk for the extension of bunds of tanks, ordered to be published in the *Fort St. George Gazette.*	26th do. do. No. 726 I.	......
Land.—Notification for acquisition of — required in Penumarru for the Chinchinada channel repairs in the Godavári district, ordered to be published in the *Fort St. George Gazette.*	26th do. do. No. 727 I.	......
Periyár Project.—Copies of the progress reports of Nos. I and II Periyár and Madura divisions, for the month of July 1892, ordered to be forwarded to the Government of India.	26th do. do. No. 731 I.	17th June 1892, Nos. 543–44 I. 25th July 1892, Nos. 624–25 I.
Forwarded accordingly	26th do. do. No 732 I.	......
Lands.—Notification for acquisition of — required for the Chinamamidapalli-Mállapalle channel in the Godavári district, ordered to be published in the *Fort St. George Gazette.*	26th do. do. No. 733 I.	......
Provincial Statement of Objectionable Items, &c., for 31st May 1892, *IV Circle, Estimates.*—Orders on the —.	26th do. do. No. 734 I.	8th Feb. 1892, No. 120 I. 1st Mar. 1892, No. 676 W. 15th June 1892, No. 537 I.
Lands.—Notification for acquisition of — required for Upper Sagiler project in the Badvél taluk, ordered to be published in the *Fort St. George Gazette.*	26th do. do. No. 735 I.	......

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Provincial Statement of Objectionable Items, &c., for 31st March 1892, *I Circle, Appropriation.*—Orders on the —.	26th Aug. 1892. No. 736 I.	......
Provincial Statement of Objectionable Items, &c., for 31st May 1892, *VI Circle, Estimates.*—Orders on the —.	29th do. do. No. 739 I.	9th Dec. 1891, No. 936 I. 20th Feb. 1892, No. 172 I. 19th May 1892. No. 427 I.
Provincial Statement of Objectionable Items, &c., for 31st May 1892, *II Circle, Estimates.*—Orders on the —.	30th do. do. No. 740 I.	8th Feb. 1892, No. 120 I. 8th Feb. 1892, No. 123 I. 24th Feb. 1892, No. 190 I. 20th April 1892, No. 396 I. 30th May 1892, No. 503 I.
Tiruvadamaradur Festival.—Correspondence regarding the diversion of water-supply in the Cauvery river at the time of —, Tanjore district, in January 1892, communicated to the Local and Municipal Department.	31st do. do. No. 744 I.	12th Sept. 1890, No. 508 I.
Land.—Notification for acquisition of — required for the Periyár Project works in the Madura district, ordered to be published in the *Fort St. George Gazette.*	31st do. do. No. 745 I	11th July 1892, No. 3477 C.
Revenue Report of Irrigation works in Sind.—Orders of the Government of India forwarding the review of the — for 1890–91, recorded.	31st do. do. No. 746 I.	......
Breached tank at Gandipolem.—Superintending Engineer, II Circle, requested to expedite his reply to a memorandum regarding the question of restoring a —, Udayagiri taluk, Nellore district.	31st do. do. No. 747 I.	......